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## NEWS LETTER

of the  
DIVISION OF WESTERN IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
(Not for publication without prior consent of the Division)

VOL. 41

Washington, D. C., January 19, 1939

NO. 1

U. S. Belle Fourche Field Station, Newell, South Dakota.

The maximum temperature for December was  $57^{\circ}$  and the minimum was  $-12^{\circ}$ . The precipitation in the form of snow was .29-inch. The total precipitation for the year was 9.85 inches which is 6.04 inches below normal. No precipitation of benefit to crops occurred during the last seven months of the year. An extremely high wind was recorded on the 25th with an average of 22.3 miles per hour for the 24-hour period and extensive soil blowing took place.

The feeder lambs were weighed on the 26th. The average gain per lamb ranged from .2 to .3 of a pound per day. The Station work during the month consisted of caring for the livestock and hauling feed.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

The maximum temperature for the past four weeks has been  $59^{\circ}$ ; the minimum,  $-5^{\circ}$ ; and the precipitation, .03-inch.

Dry weather has continued. While conditions have been excellent for range stock and for cattle and lambs in feed lots, the extended drought is unfavorable for winter grains and it is feared damage to stands may result.

A W. P. A. project requested for the Station by the Bureau of Dairy Industry has recently been approved. This project, which will include graveling roads and corrals, painting and repairing dairy buildings, and reconstructing pasture fences and irrigation ditches, will probably be started soon. Labor on this project will be furnished through the W. P. A. office in Billings.

The lamb-feeding experiment, in cooperation with the Montana State Station, was completed on January 4 following a feeding period of 60 days. Five lots of 80 lambs each were on feed in this test. All lots made very satisfactory gains and under present markets returned a fair profit for the feeding operation. The average daily gain varied from .445 pound to .538 pound in the different lots and the profit per lamb ranged from \$1.51 to \$1.78. The death loss was unusually low, since but one lamb was lost in this experiment.

U. S. Huntley Field Station (Continued)

A feeders' meeting was held at the Station on January 6, at which time the results of the test were presented by Dr. R. T. Clark of the Montana State Station. Other speakers were Director Clyde McKee, also of the Montana State Station, and J. H. Maynard, of the Feeds Department of the Great Western Sugar Company. An inspection of the lots of lambs followed the meeting. The meeting was attended by about 130 farmers and commercial feeders.

Dr. R. W. Clark of the Animal Husbandry Department of the Montana Experiment Station visited this Station on December 17 in connection with the lamb-feeding experiment.

Dan Hansen

Washington Irrigation Branch Station, Prosser, Washington.

The maximum temperature for the month of December was 59° and the minimum was 8°. The precipitation amounted to .39-inch.

Station activities included harvesting corn and sorting potatoes.

The price of potatoes has remained steady for some time. No. 1 potatoes are selling for \$17 per ton, sacks furnished; and No. 2 potatoes are selling for \$8 per ton. Top price for No. 1 hay in the stack has declined \$1 in the last few weeks and is now \$10 per ton.

Carl A. Larson

U. S. Newlands Field Station, Fallon, Nevada.

The weather during the two-week period ending January 14 has been such that field work has continued uninterrupted. Temperatures are ranging above normal for this time of year with a maximum of 57° and a minimum of 15°. The field activities have included hauling manure, hauling dirt to make some fills in sunken spots on various plots, repairing machinery, and chopping hay for the dairy unit.

The seasonal lamb-feeding data have been summarized. These results reveal that those lambs receiving chopped alfalfa hay and barley made the most economical gains. The second best gains were made on alfalfa and a grain feed of rye. The following is a brief summary of the results of this experiment.

<u>FEED</u>	<u>COST PER LB. GAIN.</u>
Chopped alfalfa + 1-1/4 lbs. barley	5.5 cents
Whole alfalfa + 1-1/4 lbs. rye	5.6 "
Whole alfalfa + 1 lb. barley + .2 lb. cottonseed meal	6.2 "
Whole s. clover + 1-1/4 lbs. barley + .2 lb. " "	6.7 "
Whole alfalfa + 1 lb. barley	7.5 "
Whole alfalfa + 1-1/4 lbs. barley	8.2 "



U. S. Newlands Field Station (Continued)

Some difficulties were experienced in feeding the heavier ration of barley. The lambs receiving 1-1/4 lbs. in their ration went off feed twice during the life of the experiment and there occurred a death or two in the lambs. This finding is in keeping with previous years' results.

E. W. Knight

U. S. Scotts Bluff Station, Mitchell, Nebraska.

The maximum temperature for the three-week period ending January 14 was 60°; the minimum was -8°. There was .5-inch precipitation. The total precipitation for 1938 at the Station amounted to 16.56 inches as compared with 13.85 inches representing the 29-year mean, 1910-1938 inclusive. July was the high month for precipitation with 3.30 inches, and October was low with .10-inch. The precipitation during the growing season (April to September inclusive) totaled 14.19 inches.

Station activities included hauling and spreading manure, repairing harness and machinery, grinding livestock feed, and the routine of caring for the livestock.

The W. P. A. project involving the dismantling of the present steer pens, grading of ground, and the construction of cement checks was started. Approximately 20 men have been employed in the project.

A recent report of storage water in the Pathfinder, Guernsey, Alcova, and Lake Minature Dams, showed that storage water on December 1, 1938, amounted to 503,990 acre feet of water, as compared with 212,330 acre feet on the same date in 1937. At the present time, snow conditions in the water shed of the Pathfinder Dam have been described as fair.

The summary of the yields of sugar beets from the irrigated rotations follows:

Maximum 21.3 tons per acre, rotation 121  
Minimum 4.9 tons per acre, rotation 20  
Mean yield 12.1 tons per acre.  
Mean percent of sugar 16.8.

Mr. Aune visited the Station during the week ending December 31.

Lionel Harris

U. S. Yuma Field Station, Bard, California.

The maximum temperature for the two-week period ending December 31 was 73°; the minimum, 32°; and the precipitation, .25-inch.

For the year of 1938, the records show the absolute maximum to have been 112°; the absolute minimum, 29°; and the total precipitation, 3.07 inches. The frostfree period was 275 days.

Agricultural activities on the project for the period of this report include the completing of cotton picking and ginning, with 4,282 bales being turned out to date; the shipping of winter lettuce, which has included about 30 cars per day; and the picking and packing of grapefruit, with about 25 percent of the total crop having been shipped at prices ranging downward to \$10 per ton.

Crop acreage reports for 1939 indicate that the Yuma Project with about 60,000 acres in crops will have 30,000 acres in alfalfa, 6,000 acres in lettuce, 7,000 acres in cantaloupes, 1,000 acres in carrots, 4,000 acres in flax, 5,000 acres in cotton, and 10,000 acres in winter and summer grains.

Station work performed during the two-week period has included the picking and ginning of cotton, hauling manure, planting alfalfa and sweet clover plats, and repairing ditches and pipe lines.

The maximum yield from the 36 plats of cotton in the irrigated rotation test for 1938 was 2,372 lbs. of seed cotton per acre; the minimum yield was 780 lbs. and the average was 1,629 lbs. The average yield for 1937 was 2,306 lbs. and the 16-year average was 1,488 lbs.

E. G. Noble

M I S C E L L A N E O U S

Mr. Scofield left Washington on the 7th for Riverside, California, which will be his temporary headquarters until about April 1.

## N E W S L E T T E R

of the  
DIVISION OF WESTERN IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
(Not for publication without prior consent of the Division)

VOL. 41

Washington, D. C., February 10, 1939

NO. 2

U. S. Belle Fourche Field Station, Newell, South Dakota.

The month of January was uniformly mild with a mean temperature of 28° which was equalled in 1931 and excelled by only one degree in 1919. A storm came up the night of the 31st that developed into a blizzard - the snow drifted badly and blocked highways.

The W. P. A. project that was started in September, 1938, was completed the first half of January. This improvement consisted of building a new concrete pit silo for sugar beet pulp; toilets and septic tank sewers; house for fire equipment; rebuilding stockade fence for sheep feed lot; building foot bridge across townsite lateral; remodeling blacksmith shop; moving soil-drying house; and some painting.

The feeder lambs were individually and lot weighed January 24 and 25. During this 28-day period the average daily gain varied from .189 lb. in Lot 2 to .265 in Lots 3 and 4. The average daily gain for all lots was .242 lb. The weather has been continuously mild during the entire feeding period so that it was rather difficult to get them to full feed of grain. A pound of grain was just about the limit they would take. The feeding period will close the first week in February.

The fat lamb prices have been high enough to date to show a fair profit on this year's operations. The fat lamb prices at Sioux City have ranged from \$8.25 to \$9.40 per cwt.

Some 70,000 lambs are on feed in the Belle Fourche and Spearfish Valleys this year.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

Dry weather continued during the 2-week period ending January 21 with several days of high wind velocity. This condition has resulted in further damage to winter grains, although it is favorable for range stock and very little feeding of this class of stock has been necessary so far. Snowfall in the mountain sections has been light and it appears probable that the water supply for irrigation may be short.



U. S. Huntley Field Station (Continued)

Work on the Dairy Bureau W. P. A. project at the Station has been under way since January 9. Twenty men have been employed in reconstructing pasture fences and stock corrals. Other Station activities included only the routine work of caring for livestock and making some repairs to buildings.

Dan Hansen

U. S. Newlands Field Station, Fallon, Nevada.

Temperatures above normal during the 2-week period ending January 28 favored field work. The precipitation of .10-inch of rain fell during this period but did not interfere with outside work. As a result of these favorable conditions it has been possible to continue hauling and spreading manure, plowing in preparation for spring seeding, and hauling dirt for some fills in areas not draining properly.

An analysis of the beef feeding data to date shows that the young steers have averaged 1.1 pounds daily gain. To make this gain it has required 12.3 pounds of hay for those steers receiving first crop alfalfa hay; 13.6 pounds for those on second crop; and 14.5 pounds for those on third crop.

This experiment was the object of a visit to the Station by a number of feeders recently. They were accompanied by the local county agricultural agent. After having the object of the work explained to them they visited the feeding corrals. Following this inspection a trip was made to several farms where cattle are being fattened for the market.

E. W. Knight

U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Temperatures of slightly above normal characterized the last half of January. Normal wind movement prevailed except during isolated short periods for a day or so, when it was unusually high, resulting in wind erosion on the unprotected sandier soils. Station activities during the period included planting alfalfa with barley as a nurse crop, and hauling manure and livestock feed. Work has been continued also on the sorting of certified seed potatoes. Certified seed potatoes are selling for \$1.15 to \$1.25 cwt. and table stock potatoes, eighty-five per cent No. 1 grade or better, are bringing 85 cents to \$1 cwt.

At a recent sugar beet conference discussing labor problems in the sugar beet industry, growers declared that wages for labor in the production of sugar beets were too high. No agreement has been reached regarding rates for 1939.



U. S. Scotts Bluff Field Station (Continued)

The annual meeting of the North Platte Valley Cheese Corporation was held January 30 at Gering, Nebraska. The Corporation shows a loss for the 1938 operations. Prof. H. P. Davis of the College of Agriculture was the principal speaker at the session, and was also the principal speaker at the monthly meeting of the Associated Chamber of Commerce, held during the evening of January 30, at Scotts Bluff, Nebraska. At both meetings, Prof. Davis pointed out the importance of the dairy cow in a prosperous stable agriculture.

Lionel Harris

U. S. Umatilla Field Station, Hermiston, Oregon.

Weather conditions for the month of December were mild and dry. Up to the present time the snow in the mountains is below normal indicating unfavorable water conditions for the project this coming season.

In October the Soil Conservation Service occupied the Civilian Conservation Camp at Stanfield for the purpose of engaging in activities with a view to preventing soil movement by wind in certain areas on the project. The greater part of their work to date has been building brush windbreaks along the West Extension canal in the vicinity of Irrigon where a brush fire adjacent to the canal denuded of vegetation about 20,000 acres of sandy soil. They have taken advantage of our experiences in protecting the soil from blowing by seeding rye. Tentative plans are being developed for the removal of surplus windblown sand from the Station tract. Also it is proposed by the Soil Conservation Service to plant a shelter belt of some 3,000 trees and shrubs along the road west of the 40-acre Station tract to be devoted to rotation experiments.

The dairy feeding program has been changed somewhat this lactation period with emphasis placed on using succulent feeds during the winter months. Squash was fed during the fall and we are now feeding Jerusalem artichokes. Production is holding up better than with hay alone or hay and grain.

H. K. Dean

U. S. Yuma Field Station, Bard, California.

Slightly warmer than normal temperatures have prevailed for the last half of January. So far no readings below 32° have been recorded at the Station.

Shipping of winter vegetables from the Yuma project continued with railroad reports showing approximately 1,000 cars having been moved for the season to date - about 900 cars were winter lettuce and the remainder made up of carrots and cabbage. The winter lettuce season is rapidly closing with prices holding firm at around \$1.70 per

## U. S. Yuma Field Station (Continued)

crate. The spring lettuce crop is rapidly maturing and shipping will begin in about three weeks.

Pasturing alfalfa fields on the project with beef cattle and sheep from the Arizona ranges has reduced the tonnage of hay usually shipped at this season of the year. The small amount of baled hay shipped to coast markets is bringing from \$9 to \$10 per ton f.o.b. farms.

A small head of water of about 200 second feet was turned into the new All-American Canal at Imperial Dam on January 25. This head will start priming operations of the Canal.

The work of the Station has included the seeding of a uniform alfalfa variety nursery and a clover nursery; plowing and leveling land for cotton; cutting trees for wood; repairing trucks and farm machinery; and general irrigating and weeding.

E. G. Noble

## M I S C E L L A N E O U S

We regret to report the illness of Mr. Hastings which will probably necessitate his absence from the office for the next six weeks.



## N E W S L E T T E R

of the  
DIVISION OF WESTERN IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
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VOL. 41

Washington, D. C., March 3, 1939

NO. 3

U. S. Newlands Field Station, Fallon, Nevada

The first snows of any considerable fall in the mountains occurred during the two-week period ending February 11 and below normal temperatures and snow have hindered field work. The amount of snow now present on the mountain ranges is rapidly approaching normal for this time of the year. Some concern has been evidenced that there would not be ample water for next year's irrigation but this fear has been allayed.

A general overhauling and repairing of machinery has been accomplished during this period. In addition, a small grain storage room in the barn was constructed.

On January 31 and February 1 the Superintendent attended meetings of the State Farm Bureau at Reno. Several discussions were attended where information regarding station activities and results of our experimental work were requested. A great deal of interest was manifested in our livestock feeding and field cultural practices. Of general concern to people of Nevada are the reduced yields of alfalfa, whether caused by disease or by the methods of farming, and the combination of feeds best suited to fattening stock cattle. The low prices being paid for butterfat plus a cheap hay roughage have made dairymen more alive to the need of better animals if a profit is to be realized from dairy operations. This is reflected in the increase of pure bred bulls during 1938. The agricultural census covering this year shows an increase of 91 percent in the number being used. This factor, in addition to a testing association, should eventually bring results.

The livestock experiments continue. At the present time the cross-bred pigs are showing more economical gains than the pure-bred Durocs. This is in keeping with the results of pasture fed lots last summer. The beef cattle are continuing to make gains. They are still on a sole ration of alfalfa hay being fed first, second, or third crop in individual pens. This will be continued until the latter part of April when grain feed will be added. The roughage at this time will probably be chopped and whole hay.

### U. S. Newlands Field Station (Continued)

The temperatures during the two-week period ending February 25 have been a little below normal but not cold enough to greatly interfere with outside work. The snowfall in the mountains is still below normal but is probably enough to assure ample irrigation water for next summer. The present water storage in the reservoir is within 50,000 acre feet of its capacity.

Prices of farm products are still low. Butterfat is selling for 28 cents a pound; beef, 8-1/2 cents a pound, hogs, 8 cents; and eggs, 20 cents a dozen.

Work at the Station has consisted of hauling manure, cleaning drains, and repairing machinery.

Station visitors during the past two weeks were F. B. Headley and Director S. B. Doten of the Nevada State Station. During Mr. Headley's visit plans were made regarding the turkey experiments for next summer. It was decided to again obtain turkeys from several sources and study the effect of breeding on the final gains and body structure of the mature birds.

E. W. Knight.

### U. S. Scotts Bluff Field Station, Mitchell, Nebraska

Precipitation during the two-week period ending February 15 amounted to only .06 inches. During several days high wind movements prevailed and resulted in further wind erosion on the lighter soils. The coldest weather of the winter up to this time occurred during this period. During five days minimum temperatures ranged from -2 to -16 degrees. Station activities included sorting potatoes, and hauling manure and livestock feed. Of the ten pens of experimental lambs on feed at the Station, four pens have been finished and shipped to market. Work on the W. P. A. project has consisted chiefly of salvaging lumber and cement, and using the broken cement for rip-rapping irrigation laterals on steep slopes.

At the present time the snow conditions in the watershed at the Pathfinder Dam are reported to be as good as last year at this time. The carry-over in the reservoirs is greater than last spring.

A bill recently introduced in the Nebraska Legislature, providing for compulsory grading, inspecting, and branding of all potatoes according to grade, is receiving opposition from growers in certain parts of the North Platte Valley. The first reported opposition came from a number of growers near Morrill, Nebraska.



U. S. Scotts Bluff Field Station (Continued)

The annual regional meeting of the American Society of Sugar Beet Technologists was held February 7 and 8, at Fort Collins, Colorado. The meetings were well attended by research workers from the inter-mountain region. One of the most interesting phases of information disclosed during the sessions, dealt with the remarkable progress which has been made by Government research workers, and research workers of the Great Western Sugar Company in developing a sugar beet resistant to the leaf spot disease.

Lionel Harris.

U. S. Umatilla Field Station, Hermiston, Oregon

Cold weather and snow prevented field work during part of the period February 1 to 15. The precipitation of 1.06 inches during the month to date is above the average for February. Considerable snow has accumulated in the mountains during the past two weeks. As of February 1, the moisture content of the snow on the Umatilla River watershed was above that of a year ago. The project reservoirs have practically the same storage as last year at this time. Field work consisted of some regrading, repairing irrigation structures and ditch cleaning.

The Soil Conservation Service CCC Camp began work with a tractor, Fresno and 27 men on the removal of the soil blow from the Station on the 15th. Plans include strawing closely behind the grading and seeding with rye. A five-row shelter belt will be planted for 1600 feet along the west side of the Station.

The Eastern Oregon Turkey Grovers report the shipment of 14 cars of turkeys during the 1938-39 shipping season. The association is planning a central killing and precooling plant for the coming year. Indications are for a 25 percent increase in the number of turkeys on the project this season.

H. K. Dean.

U. S. Yuma Field Station, Yuma, California.

Strong north and northwest winds have prevailed during most of the February 1 to 15 period. Minimum temperatures were as low as 27 degrees on the third and tenth but no damage to the citrus fruit or vegetable crops was reported.

The price of the late winter lettuce crop has improved following a program of plowing up a third of the crop and the influence of recent cold weather in holding back the rapidly, maturing spring crop. Recent prices are around \$2 per crate f.o.b. Yuma.

## U. S. Yuma Field Station (Continued)

The final reports from the five operating gins on the Yuma project show the 1938 production was 5342 bales. This figure by comparison is 7990 bales less than the 1937 crop and is the smallest amount of cotton grown in this area since 1917. The prospects for 1939 indicate a continuance of less than 6,000 acres in cotton production.

A small head of water of approximately 150 second feet continues to flow into the All-American Canal at Imperial Dam. Slightly more than half this amount is being returned to the river through the spillway at Pilot Knob. The loss in head for the twenty-five-mile section is being reflected in the rise in the water table adjacent to the canal.

The flow of the Colorado River has been increased since February first to approximately 25,000 second feet at the gaging station at Parker, Arizona. This increased head is to draw down the storage at Boulder Dam to take care of the coming spring run-off and also to test the gates at Parker Dam.

Work on the field station has included the plowing and leveling of land for cotton; manuring grass nurseries; pruning ornamental trees and shrubs; trapping gophers; general irrigating and hoeing.

Dean C. B. Hutchinson, Dr. L. D. Batchelor, and Professor B. A. Madson of the University of California accompanied Mr. Scofield on a visit to the Station and project on February 15.

E. G. Noble.



## N E W S L E T T E R

of the

## DIVISION OF WESTERN IRRIGATION AGRICULTURE

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NO. 4

U. S. Huntley Field Station, Huntley, Montana.

Frequent light falls of snow during the past month have relieved the drought conditions of the early part of the winter season. At the same time the heavier snows that have occurred in the mountain areas should assure a fairly adequate supply of water for irrigation during the coming season.

Station activities during the period have included repairing machinery and equipment in addition to the regular work of caring for livestock. The W. P. A. project, sponsored by the Bureau of Dairy Industry at this Station, has been active during the past six weeks. About 20 men are employed in repairing fences, cleaning and graveling corrals and yards, and in repairing and moving two of the dairy buildings.

Negotiations are under way for the contracting of sugar beet acreage in this factory district for the coming season. The acreage allotted for this area by the A.A.A. is 26,500 acres, while application has been made by growers for a total of over 35,000 acres. Allotments to individual growers are now being made by a committee composed of grower representatives working in cooperation with local A. A. A. authorities. These individual allotments are based on acreages that have been grown over a period of at least three years by each grower.

Dan Hansen

U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Practically no precipitation occurred during the first half of March. However, during four days wind movement was unusually high. Temperatures were moderate. Station activities included hauling and spreading manure on the rotation plots, disking, plowing, and sorting potatoes. Manure has been applied to all of the plots which receive manure in the irrigated rotations. The plots were disked immediately after the manure was applied, and plowed several days later. Work on the W. P. A. project has consisted of hauling dirt to achieve the proper grade in the new dairy location, and salvaging, and laying irrigation pipe.

U. S. Scotts Bluff Field Station (Continued)

The twenty-first annual meeting of the Nebraska Potato Improvement Association was held March 15 at Gering, Nebraska. The meeting was well attended by potato growers. Subjects discussed included production, diseases, insects, storage, and marketing of potatoes. The principal speaker at the meeting was Dr. Ora Smith of Cornell University. Dr. Smith spent the year of 1938 in Europe studying potato production and research methods used. He gave an enlightening account of the methods of potato production in Europe as compared with methods in America.

A program, sponsored by the Scotts Bluff Chamber of Commerce, has been inaugurated this year to determine the possibilities of soybeans in the North Platte Valley. The Chamber of Commerce has agreed to furnish seed for approximately twenty experimental plots to be located throughout the Valley, and for a small variety test at the Scotts Bluff Station.

Recent surveys of snow conditions in the watershed of the Pathfinder Dam indicate that the supply of irrigation water may be expected to approach that of last year. The water in storage at the present time is greater than last year. Consequently, it is believed that ample water will be available for normal requirements.

Station visitors included Dr. Ora Smith of Cornell University, Dr. H. O. Werner and Dean W. W. Burr of the University of Nebraska.

Lionel Harris

U. S. Newlands Field Station, Fallon, Nevada.

The daily temperatures during the two-week period ending March 11 have continued normal and several light snow storms occurred during the period. The snow did not remain long and proved to be beneficial to fall planted grains. The snowfall in the mountains added another 60 inches to that already on the ground. There is now assured sufficient irrigation water for the coming season.

Station work has proceeded uninterrupted during this period. Some further hauling of manure has been accomplished. In addition, some 1,500 feet of drains have been cleaned and some spring plowing done.

The beef feeding experiments continue. To date little difference seems to exist between the gains made on first, second, or third crop alfalfa hay. It is expected to continue this phase of the experiment for another six weeks, then finish the fattening with a feed of grain and perhaps cottonseed meal.

Station visitors during this period were F. B. Headley of Reno and the Commander of one of the C. C. C. camps operating on the National forests east of Fallon.

E. W. Knight.



U. S. Umatilla Field Station, Hermiston, Oregon.

Open weather permitted field work during the entire period which consisted of furrowing the orchard and alfalfa seed plantings, ditch cleaning, and replacement of turnout gates.

The precipitation for the month was 1.47 inches, making 4.22 inches since September 1. The average for February has been .89-inch and for September 1 to February 28, 5.34 inches. While the soil moisture in the irrigated regions is below average the snow in the mountains is above normal.

H. K. Dean

U. S. Yuma Field Station, Bard, California.

High winds and subnormal temperatures have prevailed during the February 16 to 28 period although the minimum temperature was below freezing only once during the two-week period. This cooler weather has held up plans for much of the early cotton plantings. Alfalfa has made a slow growth but the winter grains have continued to show up favorably.

Some early alfalfa hay is being shipped from the project at prices around \$10 per ton baled. Lettuce and grapefruit shipments continue in normal volume.

A summary of the readings from 132 test wells on the Reservation Division of the Yuma project for the period January 19 to February 22, 1939, shows that the diversion of water into the All-American Canal during this same period has raised the water table on an average of 1.43. These data were compiled by Mr. Scofield.

The work on the Station has included the hoeing of alfalfa and clover nurseries; pruning and removing seedling date palms; preparing land for cotton plantings; fencing hog pastures on the irrigated rotations; pollinating dates; grafting deciduous fruit trees; and general irrigating and cultivating.

The period of subnormal temperatures which prevailed during the entire month of February continued for the first week in March. Favorable weather for planting cotton was forthcoming about the middle of the month. Much of the cotton lands on the project are now being planted and if no periods of high winds immediately following are experienced, better than average stands of cotton should be obtained.

Shipments of spring lettuce have reached a total of 80 cars per day with prices holding well above the \$2 mark. Carrots, grapefruit and alfalfa hay are the other project crops moving to market at this season of the year.

U. S. Yuma Field Station (Continued)

Water in the new All-American Canal has been turned off for a temporary period in order to make certain repairs to the outlet gates. The amount of water released from Boulder Dam has been reduced to present irrigation requirements on account of levee repairs in the Palo Verde Valley, ninety miles north of the Yuma project.

The work on the Station has included the cutting of the first crop of alfalfa hay; planting cotton on the rotation test; hoeing alfalfa nurseries; pollinating dates; repairing ditches; trapping gophers; and general irrigating and cultivating.

Messrs. C. S. Scofield and C. A. Larson visited the Station and project on March 2 to 6.

E. G. Noble

M I S C E L L A N E O U S

We are happy to report that Mr. Hastings has resumed his duties at the office.

## N E W S L E T T E R

of the  
DIVISION OF WESTERN IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
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NO. 5

U. S. Belle Fourche Field Station, Newell, South Dakota.

The month of March was 2° warmer than normal. The minimum was 4° on the 6th and the maximum was 79° on the 24th. The winter and spring have been extremely dry with less than an inch of precipitation up to March 31st. The wind movement was less than the average except on the 30th when the wind velocity was 26 miles per hour from 10 a.m. to 12. On fields recently levelled, extreme soil blowing occurred. Field work was started on March 23d and continued to the end of the month.

The water supply in the Orman reservoir is the lowest on record; being only 60,000 acre feet and unless increased by spring precipitation there will be available an allotment of only seven acre inches for the season.

The Bureau of Reclamation has devised a new type of land leveller for demonstrational use on the project. This leveller does more efficient work than any of the patented steel levellers and can be built for less money by any blacksmith or good mechanic. Plans of this leveller can be had by writing to L. H. Mitchell, Bureau of Reclamation, Washington, D. C.

.Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

Light snows during the two-week period ending March 31 have prevented the start of field work, although fields are again dry and it is planned to begin operations during the coming week.

The sugar beet contract for the season has not yet been announced, although it is expected that definite action will be taken early next week. Growers Association representatives have returned from a conference with the Department of Agriculture officials of the A.A.A. in Washington and will meet on April 1 with local Sugar Company officials to consider further the matter of the seasons contract. The sugar section of the A.A.A. recently announced a slight reduction in rates for beet hand labor for the 1939 season.



## U. S. Huntley Field Station (Continued)

Station work has included repairing of farm machinery and harness. Activities in the Dairy Bureau W.P.A. project included graveling of corrals and barnyard and moving of two small dairy barns.

Dan Hansen

Irrigation Branch Station, Prosser, Washington.

The weather has been clear and unusually warm for March. The maximum was 80° and the minimum was 25°. Because of the favorable weather, sugar beets were seeded March 21 and emerged March 31. Wheat seeded March 14 emerged March 22 and is growing rapidly. Many of the soft fruit varieties are in bloom and the low temperature of 25° on March 28, caused some damage but was not serious. The precipitation since October 1, 1938 was 3.86 compared to the normal of 4.67. The reservoirs of the Reclamation Service contain about 800,000 acre feet. There are 95 inches of snow on the ground in Snoqualmie Pass of the Cascade Mountains.

Mr. Harry Nickle, Assistant Irrigation Engineer of the Soil Conservation Service has been at the Station since February 7. Mr. Nickle will conduct experiments on duty of water and methods of irrigation. The majority of his time will be spent at this Station and the remainder on the Kittitas Division at Ellensburg. Mr. M. R. Lewis, Irrigation Engineer, formerly cooperating with the State of Oregon, has been working with Mr. Nickle since March 20. Mr. Nickle has taken over the orchard irrigation project and will continue the soil sampling program abandoned in 1935.

The Mercer Bros. Sheep Company who operate a lambing camp at the Station moved out the last flock of ewes and lambs March 23.

During February a manuscript entitled "The Reclamation of Saline Soil in the Yakima Valley" was prepared for publication. This manuscript reports the results of experimental work on the Outlook Reclamation project during 1937 and 1938. The Outlook tract has been sold to a diligent farmer and has been planted to sugar beets. One of the outstanding characteristics of this tract was the high nitrate content. Soil extracts (1:3) prior to leaching contained as much as 38 m.e./l of nitrate. As a result of leaching, ground water was found to contain as much as 95 m.e./l.

A W.P.A. project was started at the Station March 28, with 11 men. Part of the crew will take soil samples in the apple orchard. The project as proposed included clerical help in the office but as yet no one has qualified for this work.



### Irrigation Branch Station (Continued)

Mr. K. E. Gibson of the Wireworm Laboratory, Bureau of Entomology and Plant Quarantine, at Walla Walla, Washington, has been sifting soil on the rotation plots for wireworms for the past two weeks. The population counts on the plots have been expanded from one plot in each of 23 rotations to all of the 102 plots.

Visitors to the Station were: Dean E. C. Johnson; Dr. R. L. Webster, Head of the Division of Entomology; R. D. Eichmann, Assistant Entomologist; and William Harvey, Weed Specialist; all from the State College of Washington at Pullman.

Carl A. Larson.

### U. S. Newlands Field Station, Fallon, Nevada.

The weather during this period has been warm, resulting in much activity in farming operations. This spring there has been a continued desire on the part of many farmers to replace old alfalfa stands with other crops. The expectations are for larger areas in corn this year. However, it is probable that about the usual acreage of spring sown grain will be planted.

Work at the Station has consisted of planting spring grain, renovating alfalfa, hauling manure, and plowing other areas for later planting in corn, pasture crops, and some varietal plantings of alfalfa and sweet clover. A planting of several varieties of rust resistant wheats has been made.

The winter pig feeding experiment has been completed. The cross-bred pigs made better gains in dry lot feeding trials than the pure-bred Durocs. These results check with those obtained at the end of the summer feeding on pasture.

E. W. Knight

### U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

During the last half of March, temperatures and wind movement were normal. Precipitation amounted to .30-inch, which has contributed toward a favorable soil moisture supply for seed beds. Station activities during this period included plowing, disking, floating, and harrowing oat and beet plots in the irrigated rotations; hauling manure; sorting potatoes; levelling ground with the fresno; and planting oats and sweet clover. A portion of the dry land between strips of winter wheat planted last fall, has been planted to Brunker oats, an early maturing variety. The oat and sweet clover plots in field E have been seeded. W.P.A. work consisted of hauling dirt, grading ground and installing cement irrigation checks, and bridges. All the irrigated rotation plots have been staked for planting.

### U. S. Scotts Bluff Field Station (Continued)

Up to the end of March, growers and processors of sugar beets had failed to agree on a contract for the 1939 crop. The Great Western Sugar Company has circulated ballots requesting that growers vote on two different methods of payment on the basis of the sugar content of the beets. One method involves the payment of all growers on the basis of the average sugar content of beets obtained for the whole district. The other method involves payment on the basis of the sugar content of the individual grower's sugar beets, with provision stipulating that no grower shall be paid less than the amount allotted for sugar beets which are one per cent below the average sugar content for beets from the entire district.

Additional conferences and meetings, regarding the testing of soy beans in the North Platte Valley, have been held during this period. The program is sponsored by the Scotts Bluff Chamber of Commerce. Approximately twenty farmers have shown interest in the project, and have agreed to plant a small acreage of soy beans this year.

Station visitors during this period included Dr. A. C. Hildreth and Mr. Croffcheck of the Cheyenne Horticultural Station.

Lionel Harris

### U. S. Yuma Field Station, Bard, California.

For the period March 10 to 25, temperatures far above normal were recorded. This favorable warm weather was ideal for cotton planting and all seeding during this period resulted in nearly perfect stands. A minimum of 38° occurred during the cooler period March 26 to 31. Precipitation totaled .02-inch.

Lettuce shipments from the project were around 100 cars per day during the spell of warm weather. The disposal of this rapidly maturing crop lowered prices to around \$1 per crate.

Aphis on alfalfa is reported from all sections of the project. Many fields are being cut for hay which normally would be turned to seed at this time of the year. The alfalfa seed, alfalfa nurseries and clover variety plats on the Station will be sprayed with Black-leaf-40 to control aphis.

The barley and wheat plantings on the Station give indications of a much higher than normal yield. The stunted and yellow growth of barley on several of the rotation plats is not in evidence this season. The early plantings of wheat and barley will be ready to harvest in about two weeks.



## U. S. Yuma Field Station (Continued)

The priming operations of the All-American Canal were discontinued on March 8th. The loss of water from the Canal as reflected by the rapid rise in the test wells adjacent to the Canal and the difference between the input and output of the water flowing in the Canal, has caused the temporary halt in priming operations. It is reported that no water will be turned into the canal until some plan has been developed by the U. S. Bureau of Reclamation to reduce materially the water losses.

Station work has included the planting of cotton; placing the two lots of fall pigs on alfalfa on the rotations; hoeing and roguing alfalfa and grass nurseries; planting Bahia grass selections; pollinating dates; trapping gophers; general irrigating and cultivating.

E. G. Noble

## M I S C E L L A N E O U S

Mr. Scofield returned to the office today.





## N E W S L E T T E R

of the

## DIVISION OF WESTERN IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
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NO. 6

U. S. Huntley Field Station, Huntley, Montana.

Frequent light snows and freezing weather during this period have made field work impossible and no crops have yet been seeded. Soil moisture conditions are excellent and an improvement is noted in the condition of dry land winter grains.

An agreement between beet growers and the local Sugar Company on the seasons contract for beets was reached on April 5 and the allotment of 26,500 acres for the district has been contracted. The contract is the same as was in effect in 1938 with no definite initial minimum price for beets. The price to be paid for the crop will be based on sugar content of beets and selling price of sugar made from the crop. The initial price for the 1938 crop was \$4.50 per ton with probable additional payments yet to be made as the sugar crop is marketed.

Station work has included repairs to buildings, spring clean-up of Station grounds and reconditioning of a number of ground water test wells.

Visitors during this period included Director McKee of the Montana Station, R. L. Piemeisel, and J. R. Douglas and F. H. Harries of the Sugar Plant and Insect Laboratories at Twin Falls, Idaho.

Dan Hansen

Irrigation Branch Station, Prosser, Washington.

The weather was mild during the two-week period ending April 15 with the exception of the severe freeze occurring on the 7th. The maximum temperature was 72 degrees and the minimum was 23 degrees. It has been estimated that 80 percent of the cherries and all of the apricots and peaches were killed by low temperatures. Sixty percent of the fruit buds of Delicious apples were killed, but this damage is not expected to reduce the yield materially. The frost damage to pears will be from 70 to 90 percent. The precipitation was .04-inch.

Because of poor soil moisture conditions and drying winds the sugar beets in the rotation plots were irrigated early. Alfalfa was also given the first irrigation.

### Irrigation Branch Station (Continued)

The Utah-Idaho Sugar Company has had some difficulty in contracting sufficient acreage of sugar beets to fill their allotment because of low prices paid for beets last year. Approximately 14,000 acres have been contracted.

Station visitors included Dr. S. C. Vandecaveye and Mr. L. J. Smith from the State College of Washington.

Carl A. Larson

### U. S. Newlands Field Station, Fallon, Nevada.

Exceptionally warm weather, occurring during the two-week period ending April 8 has resulted in a rapid growth to alfalfa and grain. Likewise the strong growth of fruit trees is well advanced.

Work at the Station has consisted of seeding sweet clover and some grass seed. The sweet clover planting was made on the three plots of the "A" series for pasture purposes. In addition to seeding activities, some further manuring of plots has continued together with plowing and releveling of several acres in preparation for spring seeding.

Four plots of the Y series have been plowed and are being turned over to the CCC camps as a garden site. In all, some two acres will be devoted to growing truck crops for their use. Last year a similar program resulted very satisfactorily. A new W.P.A. project has been initiated. The plans call for cleaning of several drains, the installation of a sprinkling system, and some building repairs.

The studies that were conducted last year with white top will be continued this year. Dr. Rosenfels expects to return about April 18 to conduct field work this summer. Several experimental plots will be continued and root sampling, etc, done as heretofore.

E. W. Knight

### U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Precipitation during the period ending April 15 amounted to .34-inch. Temperatures have been somewhat below normal. High wind movement prevailed during four of the fifteen days. Station activities included planting the oat plots in the irrigated rotations in Field K, planting a three-acre tract to barley and sweet clover for dairy pasture, seeding barley in an old alfalfa field for dairy pasture, seeding a twelve-acre tract on the Walker place to barley and alfalfa, hauling manure, plowing, disking, and floating beet plots. W.P.A. work included the construction of the foundation and floor for the calf barn, construction of three cement irrigation checks, and hauling dirt.



### U. S. Scotts Bluff Field Station (Continued)

A local industrialist has announced plans involving the construction of a plant for the manufacture of liquid lime-sulphur, used extensively by potato growers as a spray for the control of the psyllid insect causing the purple top disorder of potatoes.

The Nebraska Beet Growers Association, having failed to reach a satisfactory agreement regarding the price for the 1939 sugar beet crop, has refused to release its members to plant their full acreage allotment. The Association is holding back 40 percent of the acreage of member growers pending further negotiations with the Sugar Beet Company. Very few beets have been planted up to this time.

A land use committee has been organized in Scottsbluff County in order to obtain information regarding various agricultural problems in the county. The committee is composed chiefly of the more successful farmers.

Station visitors included Mr. E. J. Boschult, Mr. George Trimberger, and Professor H. P. Davis, of the University of Nebraska, and Mr. Oliver Stevenson, of the local canning factory.

Lionel Harris

### U. S. Umatilla Field Station, Hermiston, Oregon.

The minimum temperature of 25 degrees on the 7th is the first injurious killing spring frost experienced since moving the weather instruments to the present station site in March 1932. The fruit crop was severely damaged. The weather was extremely dry - a drouth of 27 days being broken with .16-inch precipitation on the 11th. High winds following this rain soon dissipated in a few days the resulting moisture.

The accumulation of sand in Field D from the desert blow area has been removed and protected with straw and a seeding of rye. The land within the Station which was covered has been regraded into borders and rye established. Approximately 3,000 trees and shrubs were planted as a shelter belt along the road. The small area in the desert which caused trouble last year was eliminated by a heavy seeding of rye last fall.

The Walla Walla - Umatilla Basin Water Forecast Committee held its annual conference to determine water resources for 1939 at the Station this year. On all of the streams, except Buttercreek, the total flow will be greater than last year. Cold Springs and McKay Reservoirs are both full to capacity.

Work on the Station consisted of irrigating, planting, cleaning corrals and weeding.

B. F. Dana spent several days here making his early plantings.

H. K. Dean

M I S C E L L A N E O U S

Mr. S. H. Hastings leaves for Riverside, California on April 29 which will be his temporary headquarters until about the first of September.

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NO. 7

U. S. Belle Fourche Field Station, Newell, South Dakota.

Climatic conditions as to temperature and precipitation were most unfavorable for plant growth during April. The maximum temperature was 91° on April 30 which is an all time record. The minimum was 14° on the 11th. The precipitation for the month was only .67-inch distributed over ten days. The 30-year average up to May 1 was 3.33 inches as compared to 1.65 for 1939.

All the cropped land was disked or duckfooted, levelled and harrowed. Due to the extreme, unfavorable soil conditions seeding of all grains was delayed until the last week of the month when the grains on the Irrigated Rotations, Maximum Production and grain varieties were planted.

Irrigation water in the Belle Fourche Dam is very low. An allotment of seven acre inches is all that is in sight at this time.

The beet acreage allotment for South Dakota was 11,500 acres and this has been signed up and some 60% planted at this time.

R. B. Balcom, Forestry Supervisor, Bureau of Reclamation, Scotts Bluff, Nebraska, visited the Station on April 19.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

There was no rainfall of consequence during the two weeks ending April 30. With several days of high wind velocity and high temperatures the top soil is dry and irrigation for the germination of spring seeded crops is general in most sections of the valley. Water was placed in the Huntley canal on April 26.

A survey of the area by Department entomologists indicates a heavy wintering over of sugar beet leaf hoppers and the planting of curly top resistant varieties of beets is general in most of the local territory. Varieties being planted are U. S. Selections 12, 33 and 34. The seeding of beets and grains is completed in most sections.



U. S. Huntley Field Station (Continued)

Station work included the preparation of land and seeding of grains and other early planted crops in the dry land plots and the seeding of beets and grain in irrigated fields.

Dr. M. M. Afanasiev of the Montana State Station spent several days at the Station during the week of April 23 in supervising seeding of beets in the cooperative beet fertilizer and disease control experiment.

Dan Hansen

Irrigation Branch Station, Prosser, Washington.

The mean maximum temperature for April was 70° - three degrees above normal and the precipitation was .04-inch which was .35-inch below normal.

The reservoirs of the Yakima Project have 958,599 acre feet of water in storage. The capacity of the reservoirs is slightly over a million acre feet. There is sufficient snow in the mountains to fill the reservoirs.

Station activities included irrigation of wheat and sugar beet cultivation.

The sale of Iowa Hybrid 939 seed corn, produced at this Station, has been very good and the demand for this seed has been greater than the supply. Approximately 8,600 pounds of this seed have been distributed which is sufficient seed for 360 to 900 acres.

Carl A. Larson

U. S. Newlands Field Station, Fallon, Nevada.

A temperature of 28° on April 15 was the lowest recorded during the two weeks ending April 22. Little damage was recorded to fruit blossoms. Fruit, such as apples and pears, are so far advanced that it will take a rather severe freeze to hurt them.

Spring work at the Station has been benefitted by the weather. It has been necessary to hand weed three acres of fall grain due to the presence of mustard. However, this weed is not nearly as prevalent on the project this year as last year. A California company, introducing a new spray material, sent a representative and spraying outfit to Fallon. They spent two days awaiting favorable weather conditions to make their tests. They were chiefly concerned in controlling mustard. The variety of mustard we have here did not react favorably to control by their spray material although they report good control on other mustard varieties in California.

## U. S. Newlands Field Station (Continued)

Other Station work has consisted of planting three acres of grass pasture, preparing areas for alfalfa and corn, and irrigating pastures and fall seeded grain and alfalfa.

The WPA project is making progress. Work has been completed on one drain and work started on the installation of a lawn sprinkling system.

The CCC enrollees have about completed the preparation of two acres of alfalfa land for truck crop planting. In addition, greenhouse plantings of tomatoes, peppers, eggplant, and cabbage have reached the transplanting stage.

Two hundred turkey poults are now in the brooders. They were obtained from four different hatcheries. Each has been wing banded and weighed. They averaged 53.5 grams per bird.

The investigational work with White Top eradication has again been started. Dr. Rosenfels of the U. S. Department of Agriculture has returned and again assumed charge of the work. He reports that the analytical work of last winter conducted on the roots of White Top plants gathered last summer showed that this particular weed had a very large reserve stock of starch stored in the roots. In some cases as much as 50 percent of carbohydrates were found present in some specimens.

E. W. Knight

U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Precipitation during the two-week period ending April 30 amounted to .07 inches. Temperatures have been slightly above normal. High wind movement prevailed during several days. During the 24-hour period on April 16, the mean hourly wind movement amounted to 34 miles which is the highest wind movement ever recorded in a 24-hour period in April, and the third highest wind movement in the history of the records. The wind came at a time when seed beds for small grain crops, sugar beets, and corn had been worked into a smooth, finely pulverized condition, in preparation for planting. In view of this condition, considerable wind erosion occurred throughout the valley. Blowing occurred on some of the heaviest soils of the valley. Another circumstance which accentuated the blowing was represented by an extremely dry soil. The total precipitation during April amounted to only .41 inches as compared with a 30-year mean of 1.74 inches. The surface soil to a depth of three to four inches is almost totally lacking in moisture. Small grain crops have germinated and emerged but are making very little growth owing to the shortage of available moisture. Alfalfa and sweet clover are showing the first signs of moisture shortage while sugar beet seed, alfalfa, and sweet clover seed sown this spring are laying in dry soil. At the present time irrigation officials are con-



### U. S. Scotts Bluff Field Station (Continued)

sidering turning the water into the laterals earlier than usual or during the next week or 10 days. Providing precipitation does not occur within the next week it will be necessary to irrigate sugar beets, alfalfa and sweet clover seeds in order to start germination.

Station activities during the period included planting sugar beets on the rotation plots, a variety test of barley and oats, fruit and windbreak trees, a variety test of sugar beets, and a sweet clover variety test; applying phosphate to rotation plots; shearing lambs; hauling manure; and plowing and disking corn ground. WPA activities included the construction of cement irrigation checks. Dr. H. M. Tysdal has been at the station the past week inaugurating alfalfa experimental work for the season.

Despite efforts of the beet growers association to reduce the acreage of sugar beets in the valley this year in an effort to obtain a more satisfactory contract with the Great Western Sugar Company, Mr. D. J. Roach, Manager of the Nebraska district of the above company, announced recently that the acreage of sugar beets already planted (over 55,000 acres) is slightly in excess of last year's acreage.

Station visitors included Dean W. W. Burr, H. W. Brokaw, and Dr. A. C. Hildreth.

Lionel Harris

### U. S. Yuma Field Station, Bard, California.

Mean temperatures approximately four degrees above normal were recorded for April. A maximum of 102° on the 24th and a minimum of 43° on the 19th represent the warm and cold periods of the month. While some short periods of high winds occurred, weather conditions have been very favorable for growing crops. Cotton on the Station and project is all up to a good stand and thinning operations have been completed on all of the early plantings.

Barley, wheat and flax crops are ripening rapidly and threshing or combining operations have begun. Grapefruit and carrot shipments are the only crops moving to market in carload crops. Final shipments of these will be completed about the middle of May.

On April 21, specimens of weevil sent to Washington for inspection were identified as a new species of the alfalfa weevil. An embargo was placed in effect on all alfalfa hay moving from Yuma County. On April 28, a few weevils were found on the Indian Reservation division of the project and a further embargo was placed on all alfalfa hay shipments from the eastern end of Imperial County.



## U. S. Yuma Field Station (Continued)

The points of serious infestation are the University of Arizona Experiment Stations in the Yuma Valley and on the Yuma Mesa; also all along Avenue B from First Street to Fifteenth Street.

Dr. J. C. Hamlin, alfalfa weevil specialist from Salt Lake City, arrived at the Station and project for survey of the weevil situation and to report on the feasibility of shipping the alfalfa wilt nursery plants from the Bard Station. Due to the short distance to infested fields, the new species of weevil in this country and the lack of information on its habits and host plants, Dr. Hamlin has recommended that no plants be moved from this area. Shipping operations were to have begun on April 24 and about 180,000 plants were to be moved.

This weevil is a native of western and southern Asia and Africa. This is the first known case of its presence in the United States. It is found mostly on Melilotus indica (sour clover), but alfalfa and Fenugreek, Trigonella sp. on the University of Arizona Experiment Station in the Yuma Valley have been injured by this bug.

Station work during the month has included the cultivating and thinning of cotton; harvesting the second cutting of alfalfa hay; binding and threshing some of the early grain plats on the rotations; general irrigating and hoeing.

E. G. Noble

M I S C E L L A N E O U S

The manuscript entitled "Quality of Irrigation Waters of the Hollister Area of California - With Special Reference to Boron and Its Effect on Apricots and Prunes" by F. M. Eaton, R. D. McCallum, and M. S. Mayhugh has gone to press.



N E W S L E T T E R  
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NO. 8

U. S. Huntley Field Station, Huntley, Montana.

Drouth continued during the 2-week period ending May 15 with a consequent heavy demand for irrigation water, and all irrigation canals are filled to capacity. The demand for water has made it necessary to restrict deliveries to some extent and place users on a partial rotation basis.

The drouth appears to be general over most sections of the Northwest and dust clouds, said to have originated in southern Canada, covered the area for several days of last week.

Station work included land preparation and seeding of corn and other late crops in the dry land plots and "irrigating up" beets and grains in the irrigated fields.

Dan Hansen

Irrigation Branch Station, Prosser, Washington.

The weather during the first part of May was unusually dry. The last rain occurred April 12 and amounted to only .04 inch.

Station activities included preparing corn plots for seeding and irrigation and cultivation of sugar beets. Thinning operations on the sugar beet plots began May 13.

The water measurement and irrigation structures for the apple orchard have been expanded in order to irrigate two plots at one time.



Irrigation Branch Station (Continued)

The price paid growers for alfalfa hay in the stack is \$7 to \$9 per ton. Butterfat has dropped to 21 cents per pound.

Carl A. Larson

U. S. Newlands Field Station, Fallon, Nevada.

Temperatures are ranging a little above normal which has resulted in heavier use of water. Such unusual irrigation requirements has caused the reservoir to draw. Ordinarily the peak height of stored water is reached about June 1; however, the peak storage this year has been reached and there has been recorded a foot fall during April.

Station work has consisted of one irrigation, planting a varietal test of sugar beets, hoeing weeds, and disking and leveling areas for corn planting.

The CCC truck garden has been planted to all the hardy vegetables such as beets, radishes, turnips, carrots, parsnips, etc. The balance of the plantings will be made in the near future.

The steer feeding experiments continue.

Three groups out of the four groups of turkey poults are doing exceptionally well. Only one poult has died out of 150 birds in these three groups. However, in one group of 50, nine poults died before they reached three weeks of age.

The WPA project continued. To date some half mile of drains have been cleaned and about 1,000 feet of pipelines laid.

E. W. Knight

U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Precipitation during the period has been extremely deficient, amounting to only .42-inch. The entire North Platte Valley is suffering from an acute shortage of moisture. Grain and alfalfa crops are greatly in need of moisture; uncropped land is extremely dry; and it has been necessary to irrigate all corn land before planting the seed. In the event of a continued lack of precipitation, it will be necessary to irrigate all land that is to be planted to potatoes. Practically all land in the North Platte Valley is in need of irrigation water and heavy demands are being made for it. Some hold the opinion that the precipitation received during the first half of May will be sufficient to germinate and establish sugar beet plantings - others are doubtful. On the lighter soils the precipitation received undoubtedly will be inadequate. Temperatures have been approximately normal, and wind movement has been comparatively low.

Station activities during the period included irrigating sugar beet plantings and new seedings of alfalfa, building pasture fences, cleaning up weeds, irrigating corn ground previous to planting, planting wind-break trees, plowing corn ground, and planting a hybrid corn experiment. WPA activities included moving the calf barn, hauling dirt, and lining irrigation ditches with broken cement. Six hogs have been turned on alfalfa pasture in rotation 65, and sheep have been turned on sweet clover pasture in rotations 45, 43, and 41. Irrigation water was turned on at the station on Wednesday, May 3, and has been running continuously to date.

U. S. Scotts Bluff Field Station (Continued)

The local canning company has contracted for a good acreage of sweet corn, and all of the tomatoes and string beans that it is capable of handling this year. Sweet corn proved to be an unusually successful crop last year, and it was necessary to limit the acreage of this crop this year as farmers desired to plant about twice the acreage that the canning plant was capable of handling.

Farmers are preparing bean ground for planting. Considerable interest has been shown in corn hybrid for the North Platte Valley and a rather large amount of seed of some of the best hybrids has been sold to local corn growers. At this time, however, it has not been definitely determined which hybrid is the best for the valley.

Lionel Harris

U. S. Umatilla Field Station, Hermiston, Oregon.

The weather of the period May 1 to 15 was unseasonably warm and was accompanied by low humidity and no precipitation. The district canals have been carrying June or July heads of water. No damaging winds occurred so crops generally made good growth. Chinese pheasants have done more damage to young corn this spring than usual. It has been necessary to fill in from a third to a half missing hills of corn and entirely replant the grain sorghum trials on the station.

The field work has consisted of irrigation, weeding and planting.

Sixty-four high school students in agriculture from Pendleton, Helix, Heppner and Bradoman and their instructors spent May 12 going over the experimental work on the station.

I. R. Jones of Corvallis was here one day going over results of the dairy experiments and making plans for future work. B. F. Dana spent the entire period making his curly top plantings.

H. K. Dean



## N E W S L E T T E R

## OF THE

## DIVISION OF WESTERN IRRIGATION AGRICULTURE

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NO. 9

U. S. Belle Fourche Field Station, Newell, South Dakota.

The drouth continued during the month of May and we received only .60-inch of precipitation in several small showers. The total precipitation from January 1 to June 1 is 2.25 inches compared to 6.05 inches normal. The total precipitation from June 1, 1938 to June 1, 1939 is 6.74 inches - the lowest on record for this period in 30 years. The mean temperature was 7° above normal and on May 30, 100° was recorded.

Irrigation water was turned into the canals on May 14. All crops had to be irrigated up and this work was completed May 28. Due to lack of rains and irrigation water, crop conditions on the project are the poorest on record.

The farm flock was sheared on the 22d and 23d. The average clip was 7.24 pounds. The wool market has shown some improvement and some sales at Belle Fourche contracted at 24 cents.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

Following a severe drouth during April and the fore part of May, rains that started on May 22 have totaled 2.29 inches during the past 10 days. This is slightly more than the normal precipitation for the month. This rainfall was particularly beneficial to dry lands and range, although it was also helpful on irrigated soils in relieving heavy irrigation demands for starting spring seeded crops.

Favorable stands of beets and other crops are reported in most sections and the thinning of beets is getting under way. Damage to crops by grasshoppers in sections to the east are reported, and Mormon crickets are occurring in large numbers in hills south of the Huntley Project. Control measures for crickets in the use of arsenicals, metal barriers and the oiling of the water in the main Huntley canal are being carried out. The latter method appears to be entirely successful so far in preventing the spread of crickets to irrigated lands of the Project.

U. S. Huntley Field Station (Continued)

Station activities during the period included irrigation of alfalfa and all spring seeded crops (except potatoes and corn) to provide moisture for seed germination.

The Dairy Bureau W.P.A. Project continued operation during this time constructing corral fences and repairing and painting dairy buildings.

Dr. O. A. Nelson of the Bureau of Entomology and Mr. Ellsworth Hastings of the Montana State College have spent the past ten days at the Huntley Station in conducting experiments in control measures for Mormon crickets. Dr. M. M. Afanasiev arrived on May 30 to supervise plantings in the cooperative plant improvement and disease project. Dr. A. M. Schlehuber, of the Agronomy Department of the Montana State Station, visited the Station on May 15 to supervise planting of the corn hybrid and variety experiment.

Dan Hansen

Irrigation Branch Station, Prosser, Washington.

During the period May 16-31, three showers occurred amounting to .08-inch of rain. This amount was the total for May. The normal precipitation for May is .38-inch.

Station activities included planting corn, irrigating wheat and sugar beets and cutting alfalfa and sweet clover hay.

Mr. Lehman of the Wireworm Laboratory at Walla Walla, Washington, used a repellant on some of the corn plots showing high wireworm populations. Hay harvest this year is two weeks earlier than normal.

The first cherry shipments were made from the Kennewick district the latter part of May.

Carl A. Larson

U. S. Newlands Field Station, Fallon, Nevada.

Two rather hard windstorms occurring during the two-week period ending June 3 have caused considerable damage to newly seeded areas where such seeding was done in the lighter soils of the project. The damage at the Station was chiefly confined to truck crops, field beans, and grain sorghum plantings.

Station activities have included irrigating, planting alfalfa and sweet clover varieties, hoeing corn, and weeds.

The W.P.A. workers have about completed the new sprinkling system, having excavated some 3,000 feet of trenches and laid the necessary pipe and sprinkler heads. There still remains the installation of



U. S. Newlands Field Station (Continued)

motor and pump and concrete lining of a small supply ditch which will bring irrigation water into the storage reservoir.

The turkey poults have completed their initial brooder stage of 8 weeks. They will now be placed on alfalfa pasture for the growing and fattening periods. With the exception of one lot of birds, very good results were obtained during this brooding stage.

The wave of mastitis trouble seems to persist among the dairy herd. Several rather severe cases have occurred with minor infections present in a number of other cows. The treatment being given seems to finally relieve the congestion of the udder. So far no serious after effects have developed in those so treated. That is, it seems to save the loss of quarters as was formerly the case.

E. W. Knight

U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Precipitation during the period May 16-31 amounted to only .05-inch. The total precipitation recorded during May 1939 was .47-inch as compared with a 30-year mean of 2.53 inches. The precipitation for 1939, from January to May, inclusive, amounted to 2.27 inches as compared with a 30-year mean of 5.19 inches. Precipitation for May 1939, is the lowest precipitation recorded for this month during the past 30 years. The extreme shortage of precipitation this spring has had a very unfavorable bearing on agricultural practices in the North Platte Valley. It has been necessary to irrigate all surface planted crops to secure proper germination. In many instances a second irrigation on sugar beets has been necessary to establish the planting. A very small percentage of the sugar beet crop in the valley has germinated at this time. Some farmers were replanting fields as late as last week. Irrigation for germination has been particularly difficult on sloping land. In the event of a continued shortage of precipitation it will be necessary to irrigate corn planted by the surface method. Corn planted by the lister method is emerging satisfactory. Temperatures during the period have been above average and wind movement has been normal.

Irrigation water in storage at the present time amounts to approximately 600,000 acre feet. The spring runoff has been very disappointing. Earlier prospects for an adequate supply of irrigation water have entirely disappeared. Earlier in the season it was believed that no allotment of irrigation water, or limitations on use would be necessary this year. At that time it appeared that the Pathfinder dam would be filled to capacity. However, at the present time, owing to the extreme shortage of spring precipitation, an allotment of irrigation water has been made. The figure has been set at 1.66 acre feet per acre, with the possibility of less than this amount being actually delivered in the event the drouth continues.



U. S. Scotts Bluff Field Station (Continued)

Station activities have consisted chiefly of irrigating sugar beets, grain and alfalfa seedings, corn ground previous to planting, and old alfalfa plantings. A head of four second feet of water has been run continuously at the Station since May 3. Additional Station activities included planting corn, sorghum, and plowing ground which is to be planted to potatoes.

Lionel Harris

U. S. Yuma Field Station, Bard, California.

Temperatures slightly above normal prevailed during the month of May with a maximum of 106°. No precipitation was recorded.

Crops on the Station and project are in good condition. Early planted cotton is flowering. Alfalfa fields turned to seed are in heavy blossom with insect damage by Lygus sp. reported from only a few areas. Wheat and barley crops have been threshed or combined and flax is now being harvested with some fields in the Somerton area producing 40 bushels to the acre.

Cantaloupes, tomatoes and a small acreage of onions and sugar beets are moving to market or factory. The serious outbreak of mildew on the cantaloupe crop in Imperial Valley has not as yet spread to the melon fields of the Yuma Project. Grape-fruit shipments of fresh fruit have been completed for the season. The remaining portion of this crop is being handled through the local grapefruit juice plant. For the 470,000 field boxes of fruit from about 1200 acres, the growers will receive less than production costs for the seasons crop. From the flower and set of new fruit, the prospects are favorable for the next crop.

The quarantine now in effect on all Yuma County and the River Section of Imperial County which prohibits the movement of alfalfa hay and straw to the coast markets has been enlarged to cover all flax seed. Recleaning and fumigation operations are expected to provide a release for the flax crop.

A fire of unknown origin destroyed the Station hay and stock shed and corrals on May 11. The alarm at 6 a.m. was followed by satisfactory performance of the Station personnel and equipment to save the work stock and mess cows and to prevent the spread of the fire to adjacent buildings.

Station work has included the irrigation and cultivation of cotton plants, harvesting the 3d cutting of alfalfa hay, hauling manure and cleaning up after the fire, threshing wheat and barley, roguing and hoeing grass nurseries.

Station visitors were Mr. Hastings, Mr. M. A. Hein and Mr. C. B. Ingraham, Assistant to the Assistant Secretary - the latter inspected the Station and project cotton plantings on May 31.

E. G. Noble

## N E W S L E T T E R

OF THE  
DIVISION OF WESTERN IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
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Washington, D. C., June 26, 1939

NO. 10

U. S. Huntley Field Station, Huntley, Montana.

The total rainfall of 3.67 inches during the period June 1 to 15 was of general benefit although field work, particularly beet thinning, was retarded and many beet fields in the area are in rather poor condition due to lack of cultivation and thinning.

Beet seedling diseases, principally "black root", are prevalent due to the cool, rainy weather. Other warm weather crops are also backward, but grain crops are in excellent condition.

Station activities included cultivation of row crops and thinning beets, and repairing machinery and buildings.

Station visitors included Dr. M. M. Afanasiev, Dr. A. M. Schlehuber and Professor A. H. Post of the Montana State Experiment Station. Dr. O. A. Nelson and Mr. Ellsworth Hastings, of the Bureau of Entomology and State Entomology Department, respectively, continued investigations at the Huntley Station in the control of Mormon crickets.

Dan Hansen

Irrigation Branch Station, Prosser, Washington.

The maximum temperature for the 15-day period ending June 15 was 86 degrees and the minimum was 35 degrees. The weather continued dry with subnormal rainfall.

Station activities included stacking hay and planting potatoes.

The yield of alfalfa hay from the first cutting was normal and the yields from the rotation plots were as follows in tons per acre: 1 year, 2.05; 2 years, 3.30; and 3 years, 3.03.

Mr. Emil Nelson, who has recently completed his graduate work at the State College of Washington, returned to the station June 1 and has been appointed Assistant Agronomist.

Mr. William Harvey, weed specialist from the State College of Washington has an experiment on weed eradication near Toppenish in the Wapato district. Work has been started on methods of eradicating white top.

Carl A. Larson



U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Precipitation during the period ending July 15 amounted to 1.53 inches which is the first significant precipitation recorded this year. The rains have been of considerable value, in view of an extremely dry soil and a limited supply of irrigation water. However, in certain areas, damage from flooding and hail, accompanied the storms. Most of the precipitation was presented in rather violent storms. During one of the storms, several bridges near the station were washed out and considerable soil erosion occurred on the steeper slopes. Wind movement has been above normal and temperatures have been approximately normal. Station activities during the period included plowing sweet clover and alfalfa ground in preparation for planting potatoes, hauling manure, thinning beets, irrigating alfalfa, cultivating corn, and planting tomatoes, potatoes, and beans. The first cutting of hay from the rotation plots has been cut and stacked. Potatoes and beans have been planted on the rotation plots, and most of the sugar beets in field K have been thinned. Weed growth has been unusually troublesome in sugar beet planting, owing to the difficulties encountered in establishing the beet plants. It has been necessary to cultivate beets twice previous to thinning.

Grasshoppers are very numerous this year. A large bait mixing and spreading program, has been under way during the past fifteen days. The results obtained from the use of poison bait, have been rather variable. Psyllid insects, causing the purple top disease of potatoes, have been found on early potatoes, and other host plants, but they are not very numerous at this time. Mormon crickets have been observed on range land adjacent to irrigated sections. Flea beetles and Colorado potato beetles are present on early potatoes, and tomatoes.

The major activities in the valley during the period have included planting potatoes and beans, and thinning sugar beets.

W. P. A. activities included shingling and painting buildings.

Lionel Harris

U. S. Umatilla Field Station, Hermiston, Oregon.

During the period June 1 to 15 the weather was cooler than normal with almost continuous wind. Toward the end of the period .21-inch precipitation fell.

The pyrethrum flower harvesting machine, developed by the Bureau of Agricultural Engineering in cooperation with the Division of Drug and Related Plants of this Bureau, was used to harvest the crop on this station. The tractor was much more successful than a team of horses in keeping up the speed with the result that more than 95% of the flowers were picked. The percentage of stems was below the usual tolerance. The dry weight of flowers is not yet



U. S. Umatilla Field Station (Continued)

available. M. S. Lowman and George Stafford were here to observe the operation.

Rather severe outbreaks of grasshoppers are causing considerable damage to the farms on the margins of the projects. Chinese pheasants have been especially destructive of corn and sorghum stands on the projects this spring. The station corn and sorghum plantings have half to two-thirds of a stand in spite of replanting two and three times. High percentages of over-wintering leaf hoppers are already causing considerable curly top in the tomato species introduced from South America.

Other visitors were Roland McKee, M. S. Hein and H. H. Rampton of the Division of Forage Crops and Diseases. They were particularly interested in observing Strawberry Clover in its native habitat.

H. K. Dean

U. S. Yuma Field Station, Bard, California.

Temperatures for the June 1 to 15 period have been lower than normal. A few hot days on June 1 to 4 and again on the 10th and 13th with a maximum of 112 degrees on June 12 were recorded. There was no precipitation.

All station and project crops have continued to make good growth. Cotton is fruiting well and alfalfa seed seems to be setting in accordance with expectations. Flax and cantaloupes are being harvested in carload lots for shipment from the project. The quarantine against flax seed and alfalfa hay have been modified to permit the shipment of these crops after a fumigation. This treatment consists of using methyl bromide under pressure in refrigerator cars. The railroad has cooperated in furnishing these cars for the shipments which are to be fumigated.

Station work has included the rebuilding of the hay and stock sheds and corrals; building an addition to the small station cottage; transplanting grass nurseries; plowing under sweet clover plots; preparing land for corn and grain sorghum plantings; seeding sudan grass; planting guar for green manure and seed increase purposes; and general irrigating and hoeing.

E. G. Noble



NEWS LETTER  
OF THE  
DIVISION OF IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
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NO. 11

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U. S. Huntley Field Station, Huntley, Montana.

The heavy rains reported by this station in the June 26 issue of the News Letter continued until June 20 and resulted in a total precipitation of 7.47 inches in a month. In general these rains were beneficial to crops, although in some of the lower, heavy-soil areas on the project which were irrigated previously there was some injury to crop stands, particularly in the case of sugar beets, potatoes and corn. Delay in thinning sugar beets due to rains has also adversely affected and delayed growth of this crop in some cases. Range and dry land crops generally are in excellent condition.

Station activities included the harvesting of the first crop of alfalfa, thinning of beets and cultivation of row crops.

Station visitors included Mr. A. M. Schlehuber, Mr. D. J. Pletsch and Dr. M. M. Afanasiev of the Montana Experiment Station; Dr. O. E. Reed, Chief of the Bureau of Dairy Industry; and Dr. R. H. Bamberg of the Division of Cereal Crops and Diseases, United States Department of Agriculture.

Dan Hansen

U. S. Irrigation Branch Station, Prosser, Washington.

The maximum temperature for the period June 15 to 30 was 100° and the minimum temperature was 37°. Precipitation amounted to .06-inch.

The station activities during this period included routine irrigation and weeding.

Mr. Kenworthy arrived at the station on June 19 to assist with horticultural investigations.

The date of the Annual Field Day this year has been set for July 27.

The harvesting of cherries in the Yakima Valley is nearly complete. The shipments of cherries this season amounted to 501 carloads in comparison to 267 carloads for last year.

Station visitors included Mr. M. R. Lewis, Soil Conservation Service, Corvallis, Oregon, and Dr. Trumble, Agronomist, Melbourne, Australia.

Carl A. Larson



U. S. Newlands Field Station, Fallon, Nevada.

Continued summer weather during the period June 15 to 30 has produced a rapid maturity of barley on the project. The first crop of hay has been practically completed and harvesting of barley has been started. The first crop of hay at this station averaged 1-1/2 tons per acre. The highest yielding plot was on the new A series. Plot 29 of this series yielded 4,840 pounds of hay per acre. This entire series averaged 2 tons per acre.

This year one plot of alfalfa on the C series had 85 pounds of barley drilled into it in the early spring. The yield of hay on this plot was 1,500 pounds greater than usual. This probably is indicative of the increase in hay that could be expected if such a procedure were followed in those areas of thin alfalfa stands.

The stored water in the Lahontan Reservoir is approximately 70,000 acre feet less than the measured amount at this time last year. However, little anxiety is felt regarding a possible shortage of irrigation water.

The W. P. A. project continues with repairs being made to corrals and areas being prepared for lawn seeding.

Relief workers have been employed in cleaning a few small drains. One rather large drain which has not been cleaned during the past 20 years remains to be cleaned.

The turkeys are making normal gains on alfalfa pasture and mash feed.

The hogs on pasture are following the same procedure in gains as was the case in pasturing experiments in 1938. The cross breeds are making the most economical gains.

The dairy cows continue to furnish some interesting data. The new treatment for mastitis has not progressed to a stage where definite conclusions can be drawn. Newly fresh heifers are still proving the worth of a highly transmitting sire and each heifer is proving to be a much better individual than its dam.

E. W. Knight

U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Precipitation during the period June 15 to 30 amounted to 1.11 inches, making a total for June of 2.64 inches, compared with a thirty year mean of 2.30 inches. In view of the extreme shortage of spring precipitation and also a shortage of irrigation water, the precipitation during this period has been of great value to agriculture in the North Platte Valley. However, during one storm, moderate to severe hail damage occurred over a rather wide area in the valley. Crops damaged in the order of importance include small grains, corn, tomatoes, and sugar beets. The rain was general over the valley as a whole, but the

U. S. Scotts Bluff Field Station (Continued)

hail occurred in localized areas. In some instances the damage was confined to a section or two of land, with no damage encountered on adjacent sections. In other areas the damage due to hail was more general. As a result of the hail, a rather large acreage of barley has been plowed up and planted to potatoes. Tomato and small grain plantings on the station were damaged severely, particularly on the Walker tract of land. The hail was less severe on the rotation plots. Wind movement during this period has been above normal, and temperatures have been below normal.

Station activities during this period included planting potatoes, hauling and stacking the first crop of alfalfa hay, irrigating grain, cultivating corn and sorghum plantings, and thinning beets. All beet plantings on the station have been thinned. In addition to the potatoes on the rotation plots, approximately fifteen acres of land has been planted to potatoes by the tuber unit method, in connection with the cooperative program between this station and the Nebraska Certified Potato Growers, for producing high quality seed for certification purposes throughout the valley next year. All crops are making satisfactory growth at this time.

Farmers in the valley are facing a shortage of irrigation water for the remainder of the season, owing to the very disappointing moisture conditions which have prevailed all spring in the watershed of the Pathfinder Dam and throughout the valley as a whole. The final allotment of irrigation water has been set at 1.5 acre feet per acre. A heavy usage of water from this allotment during May was made; consequently water for the remainder of the season for row crops is extremely short.

Grasshoppers are still very abundant. During the past week migrations of grasshoppers into the valley from surrounding dry land areas have occurred to aggravate the already abundant supply of local hoppers. Bait spreading activities are being continued on a large scale.

W. P. A. activities included building corral fences for the dairy pens, and shingling and painting buildings.

Station visitors included a group of students from the Iowa State College of Agriculture at Ames, Professors H. P. Davis and R. F. Morgan from the University of Nebraska, and Mr. L. A. Hurst of the United States Department of Agriculture.

Lionel Harris

U. S. Umatilla Field Station, Hermiston, Oregon.

With the exception of a few days during the latter part of the month the weather continued cool and windy. One rain of .21-inch was recorded.



U. S. Unatilla Field Station (Continued)

With the exception of corn and sorghum crops which were backward during the period June 15 to 30, crops in general made good growth. Of the 300 odd species and varieties of tomatoes a considerable number do not as yet show indications of curly top, although large numbers of leaf hoppers are present.

The ornamental tree and shrub plantings on the station grounds continue to attract interest. Delegations from all of the Garden Clubs within a radius of one hundred miles in Oregon, as well as a considerable number of individual parties, have visited the station this spring. The species and varieties include 43 trees and 117 shrubs. This project, aside from improving the appearance of the station grounds, has proved a means of contact with many people who otherwise would not have occasion to visit the station.

The routine work consisted of seeding and irrigating.

Station visitors were Mr. J. R. Hagg, Nutrition Chemist and Mr. R. W. Dougherty, Veterinarian of the Oregon Experiment Station.

H. K. Dean

U. S. Yuma Field Station, Bard, California.

Nearly normal temperatures have prevailed during the last half of June. A maximum temperature of 109° was recorded on June 28 and 29. There was no precipitation.

Cotton and alfalfa seed crops at this station and on the project continue to indicate normal prospects. Some of the cotton that was planted early will begin to open in about two weeks. Alfalfa seed harvesting will also begin about the middle of July. Cantaloupe and flax crops are being shipped from the project in carload lots. Flax yields in the vicinity of Somerton, Arizona, are reported to be around fifty bushels per acre. Alfalfa hay continued to be shipped to coast markets under the fumigation treatment prescribed in the quarantine regulations for alfalfa weevil.

The report of the U. S. Geological Survey for June on the Colorado River shows the discharge at Grand Canyon to be 1,660,000 acre feet. For June, 1938 it was 4,722,000 acre feet. If the flow into Lake Mead had approached normal proportions it was planned to release a larger flow down stream from Boulder Dam to provide for the spring flood. The flow being below normal, no extra water will be released.

Station work has included the construction of the hay barn and shed and also repairs to the small station cottage; planting corn on rotation plats; cultivating and roguing cotton; and harvesting and hoeing alfalfa nurseries.



U. S. Yuma Field Station (Continued)

Mr. S. H. Hastings visited the station and project on June 21 to 23. Other visitors were Messrs. C. M. Packard, W. C. McDuffie and L. L. Stitt of the Bureau of Entomology and Plant Quarantine; Dr. John W. Carlson of the Division of Forage Crops, Logan, Utah; and Mr. R. E. Blair of the Crop Reporting Division at Sacramento, California.

E. G. Noble



## N E W S L E T T E R

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Bureau of Plant Industry, United States Department of Agriculture  
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NO. 12

U. S. Belle Fourche Field Station, Newell, South Dakota.

The mean temperature for the month of July was 77.1° or four degrees above normal. The maximum temperature was 104° on July 11 and the minimum temperature was 50° on July 21. The precipitation for the month was 1.53 inches which is .82-inch below the average. The total precipitation from January 1 to August 1 is 6.60 inches or 4.51 inches below the average.

There has been no improvement in the storage of irrigation water by the Orman Dam as there have been no spring and summer rains on the water sheds of either the Red Water or Belle Fourche Rivers. The final allotment of irrigation water is 7 inches per acre.

Station activities during July consisted of cultivating potatoes, beets and corn and harvesting grain; irrigating alfalfa, grains, sugar beets, potatoes and corn; and hoeing weeds and cleaning up the sheep corral. The harvesting of early grains was completed during the month but due to shortage of irrigation water and extremely hot weather the yields are below normal.

The Twenty-fourth Annual Farm Picnic was held on Saturday, July 15. Approximately 1,220 cars were checked in during the day and evening.

Station visitors during this period included Mr. Edgar C. Joy of the Soil Conservation Service, Brookings, S. D.; Messrs. A. L. Mason and Oscar Olson, State College, Brookings, S. D.; Mr. Walter Searight, State University, Vermillion, S. D.; Mr. O. A. Beath, Experiment Station, Laramie, Wyoming; Mr. S. H. Hastings, Dr. Charles Thom and Mr. J. A. Clark of the Bureau of Plant Industry; Messrs. I. B. Johnson and N. P. Larson of the South Dakota State College; and Messrs. Carl Entorf and Floyd Collins, County Agents.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

Continued dry weather and high temperatures prevailed during the period July 15 to 31. The demand for irrigation water was heavy, canals were run at full capacity, and it was necessary to deliver water on a rotation basis for about 10 days, although no serious crop damage resulted.



U. S. Huntley Field Station (Continued).

All crops excepting potatoes are in good condition and making good growth. Potatoes in most fields are affected by root rot diseases that developed, apparently, during the month of continuous rains in late May and June. Curly top in beets has not developed to such a serious extent as was anticipated earlier in the season and the crop will probably produce nearly normal yields, even in fields seeded to non-resistant varieties. The expected invasion of Mormon crickets also has not materialized and but few of these insects have occurred on the project or closely adjacent areas.

Station activities during this period included irrigation of all crops and the harvesting of second cutting alfalfa.

The Huntley Project Picnic was held at the station on July 22 and it is estimated that 2,000 persons attended.

Station visitors during this period included Mr. S. H. Hastings, Dr. Charles Thom, Dr. C. E. Leighty and Mr. J. M. Stephens of the Bureau of Plant Industry; and Director Clyde McKee, Messrs. F. B. Linfield, H. E. Morris, A. H. Post, Ellsworth Hastings, D. J. Pletsch and Dr. A. M. Schlehuber of the Montana Experiment Station.

Dan Hansen

U. S. Newlands Field Station, Fallon, Nevada.

The weather during the latter part of the period July 1 to 15 was cooler than normal. On July 12, one-half inch of rain fell in 20 minutes. Some damage was done to truck crops and some grain was beaten down. However, on the whole, the cooler weather and storm did little damage to alfalfa. Above normal temperatures prevailed during the last half of July and occasional thunderstorms occurred in the afternoons to modify the abnormal conditions.

Grasshopper damage in cultivated fields of the project is being reduced by poison bran mix as well as by some sort of a parasitic disease that appears to be attacking the pest. Alfalfa fields on the south outskirts of the project have suffered to such an extent this year that many farmers could not cut a first crop of hay.

Continuing the cooperative investigational work on alfalfa and soils, the writer spent three days collecting second crop alfalfa samples and corresponding soils from various areas about the project. Areas known to exhibit high chloride and boron concentrations in the soil solution have been selected as likely sampling sources.

U. S. Newlands Field Station (Continued).

Soil samples were also collected from the C series area of the station as part of a soil survey experiment that was first undertaken in 1933. The area sampled is part of a reclamation experiment and analytical results will be compared to results from the earlier survey of the same area to determine effects of reclamation practices.

A general irrigation was given on July 17, 18, and 19, and again on July 22 and 24. From all indications irrigation water will be available for the entire season, there being an ample supply in Lahontan Reservoir. Some areas throughout the state, however, are suffering from lack of rainfall and an inadequate water supply.

The turkeys continue to make gains on their present rations. The better bred birds are producing the best gains.

The dairy herd has been tested again for Bang's disease and proved to be free, thus becoming accredited for another year. Doctor Earl of the Bureau of Animal Industry did the testing.

Other station activities during the period consisted of harvesting and threshing grain, cultivating corn, sorghums, beets, and beans, hoeing weeds and irrigating.

The highest yield of barley was 1,934 pounds per acre and the lowest 102 pounds per acre. The latter was on the reclamation plots on the Y series. Grain threshing has not been completed, but preliminary figures indicate that Little Club wheat is again our best yielding variety with Albit in the second place. Mowing of the second crop of alfalfa is at present under way with good yields and quality of hay expected.

The investigational work on weeds, under the supervision of Dr. Rosenfels, continues. The greater part of the investigation deals with White Top, but some work is being carried on with other noxious weeds.

W. P. A. work during July has included general weeding of roads, ditches and pasture areas; construction of wooden covers and boxes for watering tanks at the steer corrals, veneering of cow barn doors, and pouring of a concrete floor in the granary; and repairs to beef corrals, dairy barn, and other buildings have been made. In addition, some further seeding of grass has been done and some drains cleaned.

E. W. Knight



U. S. Irrigation Branch Station, Prosser, Washington.

The temperatures were unusually cool the first part of July and about normal during the latter part of the month. On July 27 the maximum temperature was 110°, the highest since 1928 when the same maximum temperature was recorded.

Station activities included routine irrigation, cultivation and weeding. The wheat grown on the rotation plots was harvested on July 17. The second cutting of alfalfa hay was also made on July 17 with the following yields of field dry hay in tons per acre: All plots, 2.22, 1st year, 1.95; 2d year, 2.50 and 3d year 2.25. New seedings of alfalfa and sweet clover were made following the removal of wheat from the four, five and seven year rotations.

Approximately 1,000 persons attended the Annual Field Day which was held on July 27. Visitors inspected all phases of the experimental program at the station.

Mr. S. H. Hastings and Dean Edw. C. Johnson visited the station on July 17; Dr. O. C. Magistad, Director of the Regional Salinity Laboratory, Riverside, California, Dr. Richard Bradfield of Washington, D. C., Dr. S. C. Vandecaveye, Soils Section, State College of Washington at Pullman and Dr. E. L. Overholser, Head of the Department of Horticulture, Pullman, Washington, visited the station on July 23.

The heads of several divisions and bureaus of the United States Department of Agriculture interested in land use visited the station on July 26 during an inspection trip to the Pacific Northwest. Some of the members of this group were Messrs. D. C. Blaisdell, M. S. Eisenhoner, F. F. Elliott, C. O. Falkenwald, C. C. Farrington, J. R. Fleming, V. Gilman, R. F. Hendrickson and C. E. Kellogg from Washington, D. C.

Carl A. Larson

U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

The total precipitation for July amounted to 1.10 inches as compared with a 30-year mean of 1.53 inches. Temperatures during the first half of July were above normal. On July 12 it reached 108° which is the highest temperature ever recorded at this station. Temperatures during the latter part of July were approximately normal, however, three days during this period the maximum temperature rose above 100°. Wind movement was slightly above normal.

Station activities during July included cutting and shocking of the small grain crops, cutting and stacking the second cutting of alfalfa hay, cultivating row crops and irrigating alfalfa, sugar beets, potatoes, corn and sorghums, and weeding.



U. S. Scotts Bluff Field Station (Continued).

Crops throughout the valley are making satisfactory growth. No psyllid damage has been noted to date on potatoes and tomatoes. The psyllid insects are not numerous this year, although some have been found in various places.

Conditions on the range lands surrounding the North Platte Valley are extremely unsatisfactory due to the ravages of drought and grasshoppers which have practically ruined the grass on these lands. Blister beetles have also been found on the range lands, and in some instances have moved on to adjacent irrigated fields of sugar beets and potatoes, in which cases it has been necessary to spray for the control of these beetles.

Station visitors during the month included the following: Dr. F. D. Keim of the Agronomy Department, College of Agriculture, Lincoln, Nebraska; Mr. Klatt of the State Department Weed Control Program; Dr. Charles Thom and Mr. S. H. Hastings; Drs. H. O. Werner, H. M. Tysdal, J. H. Jensen, M. D. Weldon, Messrs. Ivan D. Wood, E. Brackett, and J. Smith.

Lionel Harris

Miscellaneous News Item

Dr. Olaf S. Aamodt has been named Principal Agronomist in Charge of the Division of Forage Crops and Diseases by Dr. E. C. Auchter. Doctor Aamodt succeeds Mr. Phillip V. Cardon who recently was named Assistant Chief of the Bureau.



## N E W S L E T T E R

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NO. 13

U. S. Newlands Field Station, Fallon, Nevada.

The weather during the period August 1 to 12 at this station has been normal.

Grain threshing was completed during this period. The yields show that Little Club was the heaviest producer, averaging 2,277 pounds per acre; Albit was second in yield with 1,724 pounds; Turkey Red third with 1,575 pounds; Early Baart next with 1,458 pounds; and Tenmarque was last with 1,266 pounds per acre.

Second crop hay has been harvested and stacked, the average yield being 3,566 pounds per acre. The new "A" series produced 4,322 pounds per acre. To date the station average for all alfalfa plots has been 6,633 pounds per acre for the first and second crops.

Station work, in addition to harvesting grain and hay, has consisted of irrigating, cultivating and hoeing weeds.

W. P. A. employees have been busy during this period cleaning drains, hoeing weeds in roadways and repairing fences.

Station visitors included Messrs. S. H. Hastings and C. A. Larson of this division; Director Doten and F. B. Headley of the Nevada Experiment Station; Mr. Harvey L. Westover of the Division of Forage Crops and Diseases; and Messrs. Mohamed A. Selim, Irrigation Engineer and Ibrahim J. Alusi, Petroleum Engineer. Mr. Selim is from Cairo, Egypt and Mr. Alusi from Baghdad, Iraq. They are interested in irrigation waters and soils.

E. W. Knight

U. S. Irrigation Branch Station, Prosser, Washington.

The temperatures were normal during the period August 1 to 15.

Station activities included threshing wheat and routine field work. The average yield of wheat from all plots was 37.9 bushels per acre. The lowest yield, 21.5 bushels per acre, was obtained from a continuously unmanured plot. The highest yield, 51.1 bushels per acre, was produced on rotation 50.

Station visitors were Dr. E. A. Hollowell, Division of Forage Crops and Diseases, Washington, D. C.; Mr. Harry Schoth, Corvallis, Oregon; and Dr. D. C. Smith, Pullman, Washington.

Carl A. Larson



U. S. Scotts Bluff Field Station, Mitchell, Nebraska.

Precipitation during the period August 1 to 15 amounted to .80-inch. Temperatures during the period have been below average but wind movement has been approximately normal. The cooler weather during this period has been favorable for the growth of potatoes, and has also aided in the conservation of irrigation water on other crops due to the reduced evaporation.

Station activities included irrigating potatoes, sugar beets, corn, and alfalfa; weeding and cultivating potatoes and sugar beets; spraying potatoes for control of insects including psyllids, flea beetles, grasshoppers and blister beetles; and threshing the small grains.

Potato tours have been held in Banner and Scotts Bluff Counties. The potato crop in Banner County has been damaged rather extensively by drought and grasshoppers. However, some fields are showing good prospects for satisfactory crops. Generally speaking, irrigated potato fields in Scotts Bluff County are in very satisfactory condition at this time.

Station visitors during the period included Drs. E. C. Auchter, Richard Bradfield, O. C. Magistad, and A. C. Hildreth; and Mr. L. E. Gunderson and Mr. Mattison.

Lionel Harris

U. S. Umatilla Field Station, Hermiston, Oregon.

Temperatures of 100° and over were recorded on 6 days during the latter part of the period July 16 to 31. The excessive water requirement caused some firing of corn, alfalfa, trees and shrubs. Poultry men reported the loss of quite a number of hens from the heat. There was no precipitation during this period. Temperatures were normal from August 1 to 15 and wind velocities were not too high. No rain fell during this period.

Severe infestation of squash bugs (*Anasa tristis*) threatens to put an end to the squash breeding curly top project on the station and squash raising by the farmers. Some squash varieties are resistant to the anasa wilt caused by the bug but they are not resistant to curly top. The nymph stages are only partially controlled by pyrethrum spray or dust and the over-wintering adults are practically impossible to kill. It is extremely difficult to secure thorough coverage with sprays after the nymphs have hatched. A number of other sprays which were tried gave no control.

The first outbreak of sleeping sickness in horses on the project occurred during August 1 to 15.

U. S. Umatilla Field Station (Continued)

Station work consisted of repairing irrigation structures, cleaning ditches, disking under the orchard cover crop and refurrowing, irrigating and weeding.

Mr. S. H. Hastings visited the station on July 19 and 20. Other visitors included Doctors Magistad and Bradfield of the U.S. Salinity Laboratory at Riverside, California; they were accompanied through Oregon by Dr. Stephenson and Mr. Ruzek of the Oregon Station. Mr. R. S. Besse, Vice-Director of the Oregon Experiment Station, was also a visitor.

H. K. Dean

U. S. Yuma Field Station, Bard, California.

Cooler temperatures prevailed during the first part of July with a maximum of 94° on July 4. On July 12 the maximum temperature was 117° and both hot and humid weather continued from that date until August 1, when normal temperatures prevailed until August 15. Only a trace of precipitation was recorded at the station although heavy thunder storms occurred in the surrounding areas.

Alfalfa seed yields on all parts of the project with the exception of the Bard section were below normal for the 1939 crop. Threshing operations of this crop have been completed. Insect population in alfalfa fields was above normal and probably accounted for some of the low yields.

Project crops moving to market during July included flax, alfalfa hay and alfalfa seed. A 25-acre field of flax west of Somerton produced at the rate of 62.8 bushels to the acre according to the figures compiled by the County Agent of Yuma County. Alfalfa seed is selling in small lots at fifteen cents per pound.

Cotton picking on the station and project was started during August. The three gins in operation on the project have ginned 120 bales of cotton. Picking prices are seventy-five cents per hundred pounds. The estimated cotton crop on the project is about 4,500 bales from approximately 5,000 acres.

The All-American Canal Office of the U. S. Bureau of Reclamation has transplanted 300 seedling date palms from the field station to the roadways.

Station work has included the building of an additional room and a garage for the small station cottage; repairing and cleaning ditches; planting and cultivating grain sorghums; cultivating corn; cutting the fifth crop of alfalfa hay; harvesting alfalfa seed; cleaning and repairing the cotton gins.

U. S. Yuma Field Station (Continued).

Mr. R. E. Beckett, Principal Scientific Aid, formerly with the Division of Cotton and Other Fiber Crops and Diseases at the Sacaton Field Station, Sacaton, Arizona, reported for duty July 1 as Assistant Superintendent of this field station.

E. G. Noble



NEWS LETTER  
OF THE  
DIVISION OF IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
(Not for publication without prior consent of the Division)

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U. S. Belle Fourche Field Station, Newell, South Dakota.

The maximum temperature during the month of August was 102° on the 15th with a minimum of 40° on the 23d. The precipitation was 1.85 inches which is .46-inch above normal. Most of this rain occurred in small showers of less than .25-inch. The total precipitation for the year up to September 1 is 8.45 inches, 3.85 inches below normal. There has been no improvement in the storage of irrigation water and the reservoir will be practically empty by September 15.

Harvesting of the second cutting of alfalfa was completed during the first week of August. The maximum yield was 1.80 tons per acre in Rotation 8b, III-23; the minimum yield was .64-ton per acre in Rotation 44, III-22; and the average yield of all plots in irrigated rotations was 1.16 tons per acre.

The harvesting and threshing of grain was completed by the end of the month. The yields were below normal.

The work during the period consisted of irrigating, fencing, hauling manure, duckfooting and plowing.

On August 28 thirty-three Corriedale ewes were shipped in from Beltsville, Maryland, and thirty Hampshire ewes were shipped from here to Beltsville in exchange. Three Corriedale rams which were exchanged for three of our Hampshire rams were included in this shipment.

Station visitors during the month included Drs. E. C. Auchter, A. C. Hildreth and O. C. Magistad of the Bureau of Plant Industry; Dr. C. E. Leighty, Principal Agriculturist, Dry Land Agriculture, Washington, D. C.; Dr. Richard Bradfield, Head, Department of Agronomy, Cornell University; Mr. Max Myers, Department of Economics, State College, Brookings, S. D.; Mr. E. J. George, U. S. Field Station, Mandan, N. D.; and Mr. L. H. Mitchell, Bureau of Reclamation, Washington, D. C.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

Dry weather prevailed during most of the month of August with high daily temperatures. Conditions were favorable for all crops excepting potatoes which probably will give the lowest yields in the history of the Station. This crop is poor in most sections of the valley due, presumably, to the effect of diseases brought on by continuous rains and cool weather earlier in the season.

Yields of small grains are particularly good, both on irrigated and dry lands. Yields of winter wheat on non-irrigated land are reported to be up to 50 bushels per acre. Oats in the irrigated rotations yielded from a minimum of 32.4 bushels on the continuously cropped plot to the maximum of 130.6 bushels in rotation 61b, with an average of 87.1 bushels for the entire series. Early estimates indicate a yield of over 13 tons of beets per acre for the Huntley project.

Harvest prices of feed grains, barley and oats, are 70 and 75 cents per Cwt., and alfalfa hay is quoted at \$5.00 to \$6.00 per ton, farm prices. Feeder lambs are selling at \$6.00 to \$6.50 per Cwt., with indications that a large number will be fed locally.

Station activities have included irrigating and weeding and the harvesting of small grains.

Station visitors during the month included Drs. E. C. Auchter, O. C. Magistad, A. C. Hildreth, E. A. Hollowell, and Richard Bradfield; Dr. Castro of Argentina; Mr. A. L. Watt of the Mandan Dairy Station; Mr. D. A. Savage of the Woodward Oklahoma Station; and Drs. Afanasiev and Schlehuber and Professors H. E. Morris and D. J. Pletsch of the Montana State Experiment Station.

Dan Hansen

U. S. Newlands Field Station, Fallon, Nevada.

The weather during the period August 13 to 26 has been normal. About one-tenth of an inch of rain fell on the evening of August 24.

Mastitis infections are still prevalent among the dairy cows and little progress seems to have been made in the control of this disease. Several trials of various vaccine drug treatments and mechanical treatments of udder have been tried. The best that can be claimed for them so far is that we have had fewer ruined udders. Some hope is held for prevention of mastitis infection by treating the udders of heifers prior to calving.



U. S. Newlands Field Station (Continued)

The turkey weights this year are far ahead of the live weights at the same period of growth during any of the previous years' trials. This is the first year that a combination of whole grain and mash has been fed. Further trials will be necessary before definite conclusions can be drawn as to whether the addition of the whole grain caused the greater growth and weight.

The present indications are for somewhat stronger demands for hay this fall. The ranges are dry and have little feed left. As a result feeder cattle are expected to be moved into feeding areas earlier than usual.

Station work has consisted of irrigating, hoeing weeds, and repairing irrigation boxes.

W. P. A. employees are still engaged in preparing areas for fall lawn seeding, building feed storage bins for the livestock investigations, and various odd jobs such as weeding, cleaning drain ditches, and caring for newly planted lawns and shrubs.

Station visitors during this period were Mr. F. B. Headley of the Nevada Experiment Station, L. E. Cline of the Nevada Extension Service, and Mr. C. J. Thornton, State Fair manager.

E. W. Knight

U. S. Irrigation Branch Station, Prosser, Washington.

The maximum temperature during the period August 15 to 31 was 97° and the minimum was 40°. On the night of August 31 rain occurred which amounted to .52-inch; this was the first rain since July 2. The precipitation between January 1 and September 1 is 2.44 inches, or 1.13 inches below normal.

Station activities during this period included routine irrigation, weeding and laboratory work on saline soils.

The harvesting of hops in the Yakima Valley began the last part of August. Employment agencies have called for 11,000 hop pickers.

The price of alfalfa hay in the stack ranges between \$7.00 to \$8.00 per ton. The price of U. S. No. 1 potatoes is \$16.00 per ton with sacks furnished. The price of butterfat remains constant at 25 cents per pound.

Carl A. Larson.



U. S. Scottsbluff Field Station, Mitchell, Nebraska.

Precipitation during the period August 16 to 31 amounted to .03-inch. The total precipitation during August amounted to .83-inch as compared with a 30-year mean of 1.53 inches. Temperatures and wind movement have been approximately normal during this period.

Crops throughout the valley are making satisfactory progress. The potato crop is in very good condition; damage from psyllids has been very small. Bacterial blight of field beans has not been prevalent this year; consequently the bean crop promises to return good yields. Sugar beets and corn have also made excellent growth during August.

The annual station field day was held on August 17. A large crowd of people attended and participated in the activities, including examination of experimental projects, and 4-H club judging and demonstration contests.

On August 19 the Association of High Plains Potato Workers held an all day meeting at the station. Representatives from Colorado, Utah, Wyoming, Montana, Nebraska and the U. S. Department of Agriculture, participated in the discussions. During the morning the group inspected various experimental projects dealing with potatoes on the station, and during the afternoon an informal meeting was held to disseminate the experiences and ideas of the various workers among the group. The principal problems discussed included the bacterial ring rot disease of potatoes, psyllids, and production and marketing problems. Among the visitors at the station for this conference were Doctors T. P. Dykstra, L. A. Schaal, Mitrofan Afanasiev, Carl Metzger, F. M. Harrington, G. H. Starr, H. O. Werner, J. H. Jensen, and Messrs. Marx Koehnke, Bill Morrill, and W. C. Edmundson.

Storage water available for the remainder of the season is very small, and officials have reported that it will be necessary to shut the water out of the canals sometime between September 8 and 10.

Station activities during the period included irrigating potatoes, sugar beets, corn, beans, and sorghum plantings, weeding potatoes and sugar beets, and plowing oat plots that are becoming infested with the skeleton weed. The principal activities throughout the valley have included irrigating, cultivating, weeding, and spraying irrigated crops.

Mr. H. L. Westover of the Division of Forage Crops and Diseases visited the station during this period.

Lionel Harris

U. S. Umatilla Field Station, Hermiston, Oregon.

The weather during the period August 16 to 31 has been normal. No precipitation fell during this time.

The Station booth at the Umatilla County Fair at Hermiston was an exposition of the dairy feeding results secured during the past four years. The fair was larger with a wider variety of exhibits than for a number of years.

Mr. B. F. Dana spent most of the period here making selections of snap bean strains for future propagation. All of the strains grown this year are practically 100% resistant to curly top while the commercial snap varieties are 100% susceptible. The best crosses are those between Idaho Refugee and Burtner. These strains also carry over resistance to Mosaic from the Refugee blood. A plant of alfalfa with phyllody disorder similar to that occurring in beans and tomatoes was found, after years of search, while Mr. Dana was here.

H. K. Dean

U. S. Yuma Field Station, Bard, California.

For the period August 15 to 31 the maximum temperatures have been normal but the minimum temperatures and humidity readings have been somewhat higher than usual. Unsettled weather has prevailed during most of the period in the form of thunder storms in the adjoining regions north and east of the station. No precipitation was recorded locally although heavy rains and cloudbursts occurred in nearby areas.

Cotton picking and ginning is in full operation on the project with 1,215 bales having been turned out to date from the three operating gins. Nearly normal yields are reported from this first picking which represents the bottom crop. The heavy shedding of squares and small bolls of the middle crop will decrease the expected yields and damage by stink bugs will lower the quality of the late crop.

Harvesting of alfalfa seed for the season has been completed. The Yuma area which includes the U. S. Yuma Reclamation Project, the North and South Gila Valleys and the Wellton-Mohawk areas, has produced this season approximately 3,000,000 pounds of alfalfa seed. Local quotations for seed are around 15 cents per pound.

Land is being prepared on the project for a thirty percent increase in the fall flax acreage. It is estimated that 10,000 acres will be sown in late November and early December.

U. S. Yuma Field Station (Continued)

Station work has included the picking and ginning of cotton; harvesting of alfalfa seed from the wilt resistant variety increase block; grading and leveling grounds around buildings; and cleaning and repairing ditches.

Station visitors were Mr. H. L. Westover of the Division of Forage Crops and Diseases on August 17, 18 and 19; Mr. S. H. Hastings on August 18, 19, 25 and 26; Dr. W. W. Aldrich and Mr. R. N. Nixon of the Division of Fruit and Vegetable Crops and Diseases on August 31.

E. G. Noble.



NEWS LETTER  
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U. S. Belle Fourche Field Station, Newell, South Dakota.

Dry weather prevailed during the month of September and the mean temperature was 3° above normal. The maximum temperature for the month was 91° and the minimum 28°. The precipitation was .61-inch and most of this was in the form of snow on the 28th. There was a light frost on the 28th and a rather heavy frost on the 29th. There has been no really killing frost to date.

The last irrigation of sugar beets was completed on September 6. Growing conditions were good for all irrigated crops. Harvesting the third cutting of alfalfa was completed on September 20. The yields were above normal in some instances. Corn and cane were harvested during the month and indications are that the yields will be normal. Other work consisted of plowing, hauling manure, temporary fencing for pasture crops, setting up pens for the lamb feeding experiments, and hauling feed.

Due to the high prices of feeder lambs and shortage of feed on the project the number of lambs on feed will be the smallest on record since the sugar factory was built in 1927.

Alfalfa hay has been selling in the stack for \$10. to \$11. per ton; corn, \$1.08 to \$1.25 per cwt.; barley, \$1.10 per cwt.; and oats, \$1.20 per cwt.; all shipped in. Early September feeder lambs sold locally at 7¢ but increased to 7.5¢ and in some instances to 7.75¢ by the end of the month.

Station visitors included Mr. Carl H. Peterson, Bureau of Agricultural Engineering Program Surveys, Bozeman, Montana; Mr. Julius E. Nordby, Bureau of Animal Industry Director, Western Sheep Br. Laboratory, Dubois, Idaho; Mr. John H. Martin, Sorghum Investigations, Bureau of Plant Industry, Washington, D. C.; and Mr. R. P. Dougherty, Section of Nurseries, Soil Conservation Service, Vermillion, South Dakota.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

Weather conditions continued favorable for crops and field work during the month of September. The harvesting of third crop alfalfa has been completed and the harvesting of corn and the threshing of beans are well advanced. The first frost of the season, which damaged only the more tender garden crops, occurred on September 29.

Harvesting of sugar beets began on September 29. The pre-harvest estimate of the crop is for an average 13-ton per acre yield over this factory district.

The price of feed grains remains steady at \$1.00 per cwt. Alfalfa hay is selling at \$5.00 per ton. Feeder lambs are holding steady at \$7.50 per cwt., with the supply of desirable lighter weights not equal to the demand.

The annual beet growers' tour in cooperation with the Montana Experiment Station and the Great Western Sugar Company was conducted on four days, September 12 to 15, inclusive. About 235 farmers from various sections of the Yellowstone Valley, and the Big Horn Basin in Wyoming were taken over the station and the work and results explained. The tour also included visits to several farms in the Billings area.

Station activities included irrigating and harvesting corn, beans and potatoes, and the third cutting of alfalfa.

Station visitors included Mr. R. Williams, Superintendent of the Mocassin Station; Mr. R. A. Towle of the Sheridan Wyoming Station; Mr. W. R. Zuayle, Director of the Wyoming State Substations; and Messrs. A.H. Post, H. E. Morris, A. M. Schlehuber and M. M. Afanasiev of the Montana Experiment Station.

Dan Hansen

U. S. Newlands Field Station, Fallon, Nevada.

The weather during the period August 27 to September 23 has been about normal even in view of the extremely hot weather reported from the coast. Temperatures have ranged in the eighties.

Corn at the station has been cut and the silo filled. The yields this year have averaged a little over 9 tons to the acre of green corn. The highest yields were recorded from plats B16, B29, B34, and C25. Yields exceeding 10 tons were harvested from these plats. In addition to filling the regular silo some 22 tons of corn was stored in an out-door silo. This silo is constructed from wire netting lined with building paper.



U. S. Newlands Field Station, (Continued)

Three hundred lambs have arrived to be placed on winter feed. At the present time they are being adjusted to their surroundings and receiving a conditioning ration. This year it is proposed to feed rations of barley, rye, silage, chopped alfalfa, and whole alfalfa. During previous trials rye has proved a better grain feed than barley. Last year the chopped alfalfa hay produced better gains than whole hay. These two experiments will be tried further this year. In addition corn silage will be tried for the first time.

The writer and Mr. F. B. Headley of the Nevada Agricultural Experiment Station journeyed to Sacramento recently and purchased a new pig as a sire for the station herd; some inquiries were made into feed grinders and milking equipment. During the same trip a visit was made to the California Agricultural College at Davis, California. The object of the visit was to determine what new information had been found regarding mastitis, and also to acquaint themselves with the dairy equipment and methods being used. Following the trip to Davis a plan of action has been decided upon to combat mastitis in the dairy herd. The worst reactors will be immediately removed from the herd and sold to the butcher. All remaining reacting cows will be placed in a corral to themselves. In a second corral all non-reacting animals will be placed as well as all heifers as soon as they freshen. A double fence will separate these two corrals. As fast as new cases appear they will go into the reacting pen. In addition to these precautions the skim milk fed to calves will be pastuerized and all milking equipment will be disinfected between use on each individual.

Some strengthening of farm prices occurred during the first half of September. Feeder cattle were quoted at 7-1/4 and 7-1/2 cents. Hay prices ranged between seven and eight dollars per ton. The inclination of most of the farmers is to hold their hay as long as they can in the hope that war prices will again cause a rather rapid rise in values. Grain advanced \$2.00 per ton early in the month and egg and butter producers benefited by slight price advances.

Some of the hogs from the summer feeding experiment have been sold. As previously, the cross-bred hogs on pasture and grain feed made more economical gains than the pure-breds on similar feed.

Station work has consisted of seeding several acres of alfalfa, approximately 20 acres of grass plots, irrigating, chopping hay, and hoeing weeds. The W. P. A. labor projects continue. The dairy buildings have been painted and a new shelter has been built for the cows. Some work has been done on lawns and buildings.



U. S. Newlands Field Station (Continued)

Station visitors included Dr. Salmon of the Division of Cereal Crops and Diseases of Washington who inspected the progress of the weed research work; Director Doten and Mr. Headley of the Experiment Station; Messrs. S. Hatch, O. E. Stanton, and E. L. Rada of the Soil Conservation Service located in Yerington, Nevada. The last three mentioned men were particularly interested in reclamation and crop experiments.

E. W. Knight

U. S. Irrigation Branch Station, Prosser, Washington.

The weather has been mild and typical for this time of the year. The maximum temperature for the period September 17 to 30 was 91° and the minimum was 37°. There was no precipitation.

The harvesting of sugar beets has started in the Wapato District and the factory at Toppenish has begun the season's run.

The production of green lima beans in the Benton City District for frozen pack processing has proved successful this year. A viner has been installed in the district and the beans are transported to Kennewick to be frozen.

The price of butterfat is now 29¢ per pound showing an increase of 4¢ per pound during September.

Station activities included routine irrigation and weeding. The third cutting of alfalfa hay from farm fields was put up. The apple crop on the station also was harvested.

Carl A. Larson

U. S. Scottsbluff Field Station, Mitchell, Nebraska.

Precipitation for the month of September totaled .41-inch as compared with a 30-year mean of 1.54 inches. Precipitation for the growing season, April to September, inclusive, amounted to 5.86 inches as compared with a 30-year mean of 11.16 inches. Temperatures for the first half of September were above normal and slightly below normal during the last half of the month. The first frost of the season occurred on September 30, making a frost-free period of 145 days as compared with a 29-year mean of 135 days.

Irrigation water in the main canal was shut off on September 10. The last water received at the station was on September 13. Beets and potatoes were given their final irrigation from the first to the 10th of September. Unfortunately, sufficient water was not available to make a fall irrigation of the alfalfa plantings.

U. S. Scottsbluff Field Station (Continued)

On September 15 there was only a little more than 4,000 feet of water in the Pathfinder Dam. Storage in the Senincoe Reservoir amounted to 16,900 acre feet; in the Alcova Reservoir, 2,890 acre feet; and in the Guernsey Reservoir, 31,660 acre feet.

The Scottsbluff County Fair was held during the period September 13-16, inclusive. A large attendance was recorded. It was reported that the attendance exceeded that at the Nebraska State Fair. During the largest day of the fair 30,000 people were counted in. The Scottsbluff Experiment Station had an educational exhibit in the Agricultural building which dealt with potato psyllids, bacterial ring rot of potatoes, alfalfa wilt, and varieties of crops which show promise of replacing common varieties now grown in the valley.

Station activities during the period included irrigating beets and potatoes, trees, shrubbery and lawn; cutting and stacking the third crop of alfalfa hay; planting fall pasture grasses and rye; harvesting beans on the rotation plots; filling silos; cutting and shocking corn; fumigating the potato cellar; and digging potatoes. Approximately 200 tons of sorghum ensilage has been cut and siloed for winter dairy feed. W. P. A. activities included shingling, painting, and construction of foundations for the milking parlor and milk house. Additional station work included bracing of the potato cellar to support evident strains on the present timbers.

Principal activities throughout the valley have included harvesting field beans and potatoes. Both crops are yielding well and the products are, generally speaking, of good quality. Reports have been received of potatoes yielding four to five hundred bushels per acre. The first carload of turkeys, processed at the turkey killing plant located at Henry, Nebraska, has been shipped to market during this period.

Station visitors included Dean W. W. Burr and Messrs. S. H. Hastings, A. D. Edgar, and Beyer Aune.

Lionel Harris.

U. S. Yuma Field Station, Bard, California.

During the period September 1 to 15 the weather turned somewhat cooler following a heavy general storm over most of the lower desert areas of Yuma County in Arizona and Imperial, Riverside, and San Bernardino Counties in California. At the station 4.85 inches of rain was recorded for the storm. In Yuma and most of the Imperial Valley over 5 inches of precipitation was reported. The storm assumed cloud burst proportions in many sections. Severe damage occurred to the Yuma Canal which was broken in six places. Canal breaks also were reported from both the East and West Main Canals in Imperial Valley. No damage other than small gullies from erosion on the banks was reported by the All-American Canal officials.



U. S. Yuma Field Station (Continued)

Crop losses on the project as a result of the storm were confined to flooded lands from the canal breaks, loss of hay in stacks and some staining of the cotton crop. New plantings of fall lettuce were delayed on account of the wet lands and water being out of the canals as a result of the breaks. A small head of about 600 second feet was turned into the All-American Canal and delivered into the Yuma Canal below the breaks in the latter canal. This relieved the water shortage for the Yuma Valley. The flood coming down the Colorado River being contributed to mostly from the runoff of the Bill Williams River has been sufficiently muddy to use for limited priming operations in the All-American Canal. This flood was reported to be as high as 100,000 second feet from the Bill Williams River but the runoff has been pinched back at Parker and Imperial Dams to even the river flow past Yuma to about 25,000 second feet.

During the last half of September the breaks caused by the storm to the Yuma Canal were repaired and water turned into all laterals on the 28th. The flood waters on the Indian Reservation have slowly receded leaving about 500 acres of cotton and grain sorghum damaged. Normal temperatures prevailed during this period until September 23. The maximum temperature was 107°. Cooler weather was recorded thereafter with a minimum of 50° on September 28. A trace of precipitation was shown on the 23d and .05-inch on the 25th.

Cotton picking and ginning on the project have been resumed with 1,743 bales being reported from the three operating gins. This represents about 45 percent of the expected total crop. For the same date in 1938, 1,960 bales were ginned, and for 1937, 4,640 bales were reported.

Lettuce plantings in the Yuma Valley have now been seeded and land is being prepared for flax with about 10,000 acres listed as the estimated acreage.

Rains and insect damage have made for a total loss to most of the second alfalfa seed crop. These fields have been cut for hay. Alfalfa hay prices have advanced following the heavy losses to baled and loose hay in the stacks on account of the heavy rains. Present quotations are \$12.00 per ton baled F.O.B. farms. Alfalfa seed prices are around 15¢ per pound.

Station work has included the picking and ginning of cotton; cutting alfalfa nurseries; planting winter peas; disking fallow plats; plowing under green manure crops; reading ground water test wells; cleaning seed storage rooms, rearranging corrals; gravelling roads; and general irrigating and hoeing.

E. G. Noble.



M I S C E L L A N E O U S

Mr. Scofield left Washington on September 19 for Riverside, California; he is expected to return early in November.

PAPERS SUBMITTED FOR PUBLICATION

<u>Title</u>	<u>Author</u>	<u>To be published in</u>
Salt Balance in Irrigation	Carl S. Scofield	Journal of Agricultural Research
Determination of Boron in Plant Material	L. V. Wilcox	Industrial and Engineering Chemistry
Lysimeter Investigations at the U.S. Umatilla(Oregon) Field Station	Stephen H. Hastings Harold K. Dean	Technical Bulletin

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

RESEARCH REPORT

NO. 1000

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NO. 16

U. S. Huntley Field Station, Huntley, Montana.

Light rains early in the month of October interfered with harvesting. During the latter part of the period, October 1 to 15, good progress was made in the harvesting of beets and the threshing of beans. With improved unloading facilities at receiving stations and with most of the crop being hauled in trucks, the beet harvest is completed in about three weeks whereas formerly from six weeks to two months were required for this operation.

Cattle and range lambs are moving in to winter feed lots, although it appears that there will be less feeding than in previous seasons due to local scarcity and high prices of feeder lambs and uncertainties of market conditions. Feed grains remain at 80¢ to \$1.00 per cwt., and hay at \$5.00 to \$6.00 per ton.

The harvesting of all potatoes and of beets in the rotations was completed during the period. The yields of potatoes were the lowest in the history of the station and ranged from 9.3 bushels on the continuously cropped plot to 146.7 bushels in Rotation 61. The near failure of the crop at the station, as well as in other sections of the Yellowstone Valley, it appears was due to the effect of a month's continuous rain early in the season, a condition that favored the development of Fusarium and other bacterial diseases.

Station visitors included Dr. R. T. Clark, Head of the Animal Husbandry Department of the Montana State Experiment Station, on October 7, who made arrangements for cooperative lamb feeding; and Dr. M. M. Afanasiev and Dr. D. J. Pletsch of the Montana Station who spent several days here in connection with the harvesting of potatoes and beans in cooperative experiments.

Dan Hansen

U. S. Newlands Field Station, Fallon, Nevada.

The usual fall weather so far as temperatures are concerned was recorded at Fallon during the period September 24 to October 7; however, a rather unusual storm period occurred with the result that about 30 tons of alfalfa hay is in the shocks. It was cut three weeks ago and has been rained upon on three occasions.

Thirty head of yearling steers have arrived at the station. They have been placed in pens and the preliminary feeding has started. As soon as they have become accustomed to their surroundings the feeding experiments will get under way.

Station work has consisted of hoeing weeds, hauling manure, overhauling the tractor, and some preparation of plots for fall seeding of grain. The latter work has been somewhat interfered with due to rain. However, it is expected that all such seeding will be accomplished within the next two or three weeks. The re-arrangement of corrals at the dairy barn and the new equipment for furthering the investigation dealing with mastitis has been about completed. The W. P. A. work has consisted of finishing the painting at the dairy barn and the inside of some laboratory rooms, construction and repair of corrals, hoeing weeds on roadways, and caring for newly seeded lawn areas.

E. W. Knight.

Irrigation Branch Station, Prosser, Washington.

The maximum temperature for the two weeks period, October 1 to 14, was 74° and the minimum 32°. The rainfall amounted to .18-inch.

The potatoes grown on the rotation plots were dug on October 13 and 14. The highest yield of 392 bushels per acre was obtained from Rotation 50. In general the potato yields were much improved over last year. The average yield for all plots was 126.5 bushels per acre compared to 58 bushels per acre for 1938.

Mr. W. W. McLaughlin, Chief of the Irrigation Division of the Soil Conservation Service, visited the station on October 4.

Carl A. Larson.



U. S. Scottsbluff Field Station, Mitchell, Nebraska.

Precipitation during the period October 1 to 15 amounted to .30-inch with temperatures and wind movement normal. The total evaporation for the growing season (April - September, 1939) amounted to 45.87 inches, as compared with the 29-year mean of 36.39 inches, and is the second highest in the history of the records.

Station and project activities consisted chiefly of harvesting potatoes. Approximately 90 percent of the potatoes in the valley have been harvested, most of which are being stored in farm cellars. The sugar beet harvest began in the valley on Monday, October 9. Factories began slicing beets on Thursday, the 12th.

Lamb feeders in this area have not been very active in the purchase of feeder lambs. Consequently, present conditions indicate that a smaller number will be fed this season than for a number of years. However, Wyoming sheep men have been finding a ready market for their feeder lambs in the corn belt.

Station visitors included Prof. Davis, Mr. Olson and Mr. Douthitt.

Lionel Harris.

U. S. Umatilla Field Station, Hermiston, Oregon.

During the period September 16 to 30 the weather was warm and clear with little wind movement and no precipitation.

One phase of our alfalfa pasturing studies this year has included pasturing the second and third crops from Field E1 with the dairy cows. The alfalfa was allowed to grow to what would be slightly over mature for hay before the cows were turned in. During the first day the cows ate until they were very full but no cases of bloat were experienced. As a precaution the cows were given a good feed of hay before going on pasture. The second crop furnished 133.3 cow-days per acre and the third 83.3 cow-days. Based on previous figures of hay consumption the second crop replaced 2,933 pounds of hay per acre and the third crop 2,333 pounds.

Station work consisted of harvesting corn and sorghums, cleaning up pastures by clipping and burning weeds and assisting Mr. Dana in harvesting his bean, tomato and squash selections.



U. S. Umatilla Field Station (Continued)

Prof. H. E. Cosby, Chief of the Poultry Department at Corvallis, spent two days at the station and in the vicinity investigating crooked legs of turkeys. The exact cause has not yet been determined. Particular attention was given to the feeding methods of the growers but the occurrence of the trouble among flocks fed varying rations would indicate that the trouble was at least not entirely due to feed deficiencies. In some flocks as high as one-third of the birds have wobbly or extremely crooked legs. In extreme cases the birds are unthrifty and do not finish as prime stock.

H. K. Dean.

M I S C E L L A N E O U S

A bulletin reporting the methods of reclaiming the saline Outlook tract, entitled, "Reclamation of Saline (Alkali) Soil in the Yakima Valley, Washington", is just off the press. This is a Washington Agricultural Experiment Station Bulletin No. 376, 1-39 pp.

A paper entitled, "Boron Absorption by Sunflower Seedlings" by Carl S. Scofield, L. V. Wilcox, and George Y. Blair, has been submitted for publication in the Journal of Agricultural Research by this Division.

## N E W S L E T T E R

OF THE  
DIVISION OF IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
(Not for publication without prior consent of the Division)

VOL. 41

Washington, D.C., November 10, 1939

NO. 17

U. S. Belle Fourche Field Station, Newell, South Dakota

Weather conditions during the month of October were favorable for the harvesting of potatoes and sugar beets and for all other field work. The maximum temperature was 77° on October 22 and the minimum was 20° on the 31st. A killing frost occurred on the 27th when the temperature went down to 21°. The total precipitation for October was .77-inch in the form of light showers and snow, whereas the normal precipitation is 1.13 inches. The total precipitation for the year to November 1 was 9.83 inches as compared with a 28-year mean of 14.77 inches.

Potatoes were harvested the first week in October and the yields were among the lowest on record, ranging from zero in ten rotations to 90.9 Bu. in Rotation 24a. The failure of the potato crop was due to the wet condition of the ground immediately after planting. The seed rotted before the potatoes sprouted.

The harvesting of sugar beets in the district was started on October 9 and at the Station on the 13th. The yields in the irrigated rotations ranged from 2.72 tons in Rotation 46 to 15.37 tons from Rotation 49. The average was 9.39 tons.

On October 9 the lamb feeding operations started with seven lots of 100 lambs each and are to be fed the following rations:

- Lot 1 - Corn and alfalfa.
- Lot 2 - Corn, corn silage and alfalfa.
- Lot 3 - Corn, beet pulp and alfalfa.
- Lot 4 - Corn, beet pulp, beet tops and alfalfa.
- Lot 5 - Barley, beet pulp, molasses, and alfalfa.
- Lot 6 - Barley, beet pulp, beet tops, molasses  
and alfalfa.
- Lot 7 - Barley, beet pulp, beet tops, molasses, bone  
meal and alfalfa.

This season will complete the third year for these ration combinations. The lambs are of Rambouillet-Corriedale breeding and cost, delivered at the Station, eight cents per pound.

U. S. Belle Fourche Field Station (Continued)

Station visitors during the month were Mr. Lloyd W. Colman and a group of 4-H Club Boys from New Underwood, S. Dak.; Major L. A. Pulling, 4th Cavalry, Fort Meade, S. Dak.; Mr. James W. Wilson, South Dakota State College, Brookings, S. Dak.; Messrs. Steven J. Kostan and Fred Newport, Soil Conservation Service, Rapid City, S. Dak.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

Weather conditions continued favorable for the beet harvest and other field work during the period October 16 to 31. The harvest of beets is nearing completion in most parts of this district. Yields of beets generally are rather disappointing and will probably average about 12 tons per acre for the area as compared to a pre-harvest estimate of 13.5 tons.

Yields of beets in the irrigated rotations at the Station were also comparatively low, ranging from .99 ton in Rotation 46 to 13.34 tons in Rotation 2b - continuous beets - manured. The yield of beets in the maximum cropping experiment was at the rate of 19.71 tons, which was 1 ton lower than the average for the 14-year period.

A shipment of 600 range lambs from the State Station flock at Bozeman was received on October 23. These lambs will be used in cooperative feeding experiments.

Station field work included completion of the beet harvest, threshing of beans, hauling manure and plowing. A two-way one furrow tractor plow is being used for plowing and has proved to be very satisfactory, both for plowing plots and larger fields.

Station visitors included Dr. R. T. Clark and Mr. Ralph McCall of the Animal Husbandry Department and Dr. Don J. Pletsch of the Entomology Department of the Montana Experiment Station, and Mr. Ralph D. Mercer, Agronomist of the Montana Extension Service.

Dan Hansen

U. S. Newlands Field Station, Fallon, Nevada.

The weather during the period October 8 to 21 has been about normal. The days have been warm with maximum temperatures around 75° and the temperatures at night have been approximately freezing.



U. S. Newlands Field Station (Continued)

The total yields of hay as recorded for the three cuttings were 4.7 tons per acre for the Station average and 5.7 tons of the new "A" series. All of the third crop has been chopped. Approximately 40 tons of hay was stored in the dairy barn and 25 tons reserved for steer feeding experiments.

The 30 head of steers have finished their preliminary conditioning period and have been weighed and segregated into individual pens. Eight head are being fed first crop alfalfa hay; eight head, second crop; and eight, hay from the third crop. The remaining six are receiving second crop hay and corn silage. The present plans call for at least eight weeks on hay alone, then a finishing period with barley and dried beet pulp.

The first feeding period with the lambs has been completed. Those lambs on chopped alfalfa hay appear to be producing greater gains than those being fed whole hay. The silage and hay group seemed slower getting started but are doing better at this time.

Work at the station has consisted of finishing the third crop of hay after some three weeks of alternate storms and sunshine, preparing grain plots for fall seeding, and burning weeds.

E. W. Knight

Irrigation Branch Station, Prosser, Washington

The weather continued mild during the period October 15 to 31. The first killing frost occurred on October 25 which was about 10 days later than usual. The frost-free period was 172 days this year. Irrigation water deliveries were discontinued October 21; the irrigation water carry-over in the reservoirs is 416,809 acre feet.

The sugar beets in the rotation plots were harvested October 27 and 28. The average yield of sugar beets was 12.7 tons per acre for all plots. The highest yield of 17.9 tons per acre was obtained from Rotation 29 (corn and sugar beets manured). Samples were taken from all sugar beet plots for sugar determinations.

The sale of Washington apples was considerably reduced by the loss of the export market. However, a state campaign for domestic consumption of apples has been helpful. Apple prices paid by jobbers are \$1.35 per box (40 lbs.) for extra fancy Jonathans and \$1.50 to \$1.75 per box for Red Delicious. Prices received by producers for other farm commodities are as follows: Hay in the stack, \$8.00 per ton; No. 1 potatoes, \$16.00 per ton; hops, \$0.35 per pound; barley, \$22.50 per ton; and butterfat, 28¢ per pound.

Irrigation Branch Station (Continued)

W. P. A. workers are collecting soil samples from alfalfa fertilizer plots and determining root populations from soil samples taken in the apple orchard. Soil sampling from various plots and rotations will continue as long as the weather permits.

Carl A. Larson

Scottsbluff Field Station, Mitchell, Nebraska

There was no precipitation during the period October 16 to 31 and for the entire month it amounted to only .30-inch as compared with a 30-year mean of .92 inch. Temperatures and wind movement during the period were normal. Generally speaking the climatic conditions have been unusually favorable for fall harvesting operations.

Station activities included harvesting sugar beets, sorghum varieties, corn hybrids, and hauling coal. Activities throughout the valley have consisted chiefly of the harvesting of sugar beets. Approximately eighty percent of the crop had been delivered to factory dumps by the end of October. Yields throughout the valley are poor, but the sugar content is high. The turkey plant at Henry, Nebraska, has commenced fall operations in the processing of turkeys for eastern markets. A large crop of high quality birds will be handled through this plant according to preliminary reports.

W. P. A. activities included construction work on the milking parlor. The pipe stanchions have been welded, and the frame work of the building has been erected.

Feed grains are selling from 90¢ to \$1.10 cwt. Prices of U. S. No. 1 potatoes ranged from 75¢ to 90¢ cwt.

Lionel Harris

U. S. Yuna Field Station, Bard, California

Warmer than normal temperatures have prevailed during the month of October with the humidity low due to drying winds. The maximum temperature for the month was 96° and the minimum 40°. No precipitation was recorded.

Cotton and grain sorghum harvesting on the project continues. As most of the cotton fields have been picked over once, the amount coming into the gins by the end of the month averaged about 24 bales per week. Most cotton growers are waiting to make the next picking after the first killing frost.



U. S. Yuma Field Station (Continued)

A disease in a planting of guar, Cyamopsis tetragonaloba, has been observed on one of the station plots. This planting was made in June and the disease was observed early in July. It has tentatively been classed as a bacterium and quite probably results from an insect puncture. An examination of the hollow stems of the plants reveals a brownish black substance rather localized at each puncture. Several of these areas are found throughout the hollow area of the stem. It was estimated that 5 percent of the plants were killed and probably 100 percent showed the presence of the disease in various stages.

Station work has included the harvesting of the grain sorghum and corn plots on the rotations; clipping alfalfa fields; planting winter grasses in the nurseries; planting clovers and miscellaneous winter legumes; and repairing fences and cleaning ditches.

A crew of 8 C.C.C. men from the U. S. Reclamation Camp at Yuma started working at the station on October 16. They were engaged in pruning date palms during the remainder of the month.

Mr. Scofield visited the station on October 21 and 22; Prof. W. E. Bryan of the University of Arizona and Mr. G. H. Seamans, Superintendent of the University of Arizona Yuma Substations, inspected the station plantings on October 25. Dr. H. G. Johnston and Messrs. M. F. Gottlieb and Frasier of the Arizona Extension Service and Mr. T. H. Cassidy of the U. S. Bureau of Entomology and Plant Quarantine called at the station on October 28.

E. G. Noble

M I S C E L L A N E O U S

The office of the Chief of Bureau has sent us the following notice in respect to a proposed correspondence course in elementary statistics for field workers:

"The Department Graduate School, in response to various inquiries, is considering the possibility of offering its field workers a correspondence course in elementary statistical methods in Biology and Plant and Animal Industries. The course considered would lead up to the treatments given in textbooks, making possible



their more intelligent use. A well-known textbook would be used as a guide. This is not designed as a college credit course, but a certificate would be awarded for satisfactory completion.

"The tentative plan contemplates 15 to 18 assignments, requiring on the average 5 or 6 hours each. Study of assignments would be followed by answering questions and working practical problems, which would constitute the student's report. Opportunity for discussion of the student's own problems would be given. The total expense would probably not be over \$25, which would include the price of the textbook, fees, and postage on assignments.

"Those interested should inquire of Dr. A. F. Woods, Graduate School, Department of Agriculture, Washington."

## N E W S L E T T E R

OF THE  
DIVISION OF IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
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VOL. 41

Washington, D. C., November 25, 1939

NO. 18

U. S. Huntley Field Station, Huntley, Montana.

With precipitation of only .11-inch during the period November 1 to 15, weather conditions continued favorable for the completion of the beet harvest and for fall plowing. The delivery of beets to receiving stations was completed by November 5.

The initial payment on beets delivered in October was made on November 15. The payment made by the Great Western Sugar Company was at the rate of \$4.35 per ton. An additional payment under provisions of the Agricultural Adjustment Administration will bring the total initial amount to \$6.39 per ton. Additional payments may be made by the company as the sugar manufactured from the crop is marketed, the amount of such payments, if any, depending on the selling price of sugar.

The Lamb Feeding Project, in cooperation with the Montana State Experiment Station, was started on November 4. A total of 600 lambs, with an average weight of about 65 pounds, was placed on feed in five lots of 120 lambs each. The lambs are Rambouillet, Corriedale and Hampshire breeding.

The rations under test in this experiment are as follows:

- Lot 1 - Oats and alfalfa.
- Lot 2 - Oats, corn silage and alfalfa.
- Lot 3 - Oats, wet beet pulp and alfalfa.
- Lot 4 - Oats, wet beet pulp, beet tops and alfalfa.
- Lot 5 - Oats (50%), dried molasses beet pulp (50%) and alfalfa.  
Oats (50%), dried molasses beet pulp (50%) and alfalfa (self-fed).

Field work included hauling manure and plowing and this work is nearly complete.

Station visitors included Dr. R. T. Clark, Mr. J. A. Murray and Mr. C. E. Hughes of the Animal Husbandry Department of the Montana State Experiment Station; Mr. O. W. Monson, Irrigation Engineer of the Montana State College; and Dr. R. H. Bamberg of the Division of Cereal Crops and Diseases at Bozeman.

Dan Hansen.

U. S. Newlands Field Station, Fallon, Nevada.

Minimum temperatures as low as  $16^{\circ}$  were recorded during the period October 22 to November 18 and have definitely ended the growing season for this year. However, the ground is not frozen so the usual fall work continues. Some seeding of fall grain has been made, manure hauled, weeds burned, and plowing done. The last seasonal irrigation was given on October 26 and 27. At that time the entire farm area was covered. This late fall irrigation has proven to be well worthwhile on areas of light soil. Since practicing this late irrigation the station has never lost alfalfa or clover seedings during severe winters of sub zero temperatures. Those seedings made in August have come through winters with temperatures as low as  $19^{\circ}$  below zero without loss or thinning out of the stand.

The sugar beets on plot Y2 were harvested. Yields recorded were at the rate of 15 tons per acre. The area included in plot Y2 is rather spotted and is not considered by any means the best land available at the station. However, the yields obtained indicate the extent of the reclamation of plots of this series and in a measure the possibilities of sugar beet production on the Newlands Project.

This year a small outdoor silo was constructed. It is made of woven wire lined with heavy reinforced building paper. Twenty-two tons of corn silage was stored in this manner. The silo, when opened, did not have more spoiled silage than usually occurs in concrete silos; there was a little on the top and some extending down the walls for a slight distance. It has proven to be a practical and inexpensive way of storing corn silage.

Comparisons are being made of the value of corn silage when fed with varying amounts of barley and alfalfa hay roughage as a fattening ration for lambs. Lambs on a feed of corn silage and hay without any grain averaged about a pound gain per lamb per week for a period of four weeks, then made very little gain. Thus it appears corn silage may be used with alfalfa hay for a period of conditioning prior to grain feeding. Whether such a procedure would be as good a practice as feeding grain, silage, and hay from the start of the fattening procedure, will be determined as soon as this feeding experiment is terminated. In addition to lambs being fed corn silage, one pen of steers is receiving similar feed, that is, silage and hay. The steers that are on a sole ration of hay are progressing slowly. As this experiment is to determine at first the value of each of the three crops of alfalfa, the progress being made is about as expected. The group receiving silage as well as hay is making more rapid gains.



U. S. Newlands Field Station (Continued)

The turkeys have been killed and marketed. The final results of this experiment will be available as soon as the data has been tabulated. This year the turkey feeding experiments produced some of the largest birds ever grown at the station. Some of the toms exceeded 30 pounds in weight and many of the hens weighed 16 pounds. These birds were received on April 11. It can be said at this time that the turkeys made greater gains when all the whole grain they could eat was fed as a supplement to the mash rations.

Station visitors were Mr. F. B. Headley, Director S. B. Doten and Mr. C. E. Fleming of the State Agricultural Expt. Station, and Prof. V. E. Scott of the University of Nevada.

E. W. Knight.

Irrigation Branch Station, Prosser, Washington.

The mild fall weather continued during the period November 1 to 15. The minimum temperature was 23°; there was no precipitation.

The corn plots on the rotations were husked during the first part of November. The corn earworm damage was severe on all the plots. Shelling of samples for moisture determinations was started on November 14.

Mercer Brothers, lambing camp operators at the station, are hammering alfalfa hay this year for sheep feeding instead of chopping it as they have in the past.

The price of potatoes to farmers has advanced from \$17.00 to \$23.00 per ton. Butterfat has also shown an increase and is now 30 cents per pound.

Carl A. Larson.

U. S. Scottsbluff Field Station, Mitchell, Nebraska.

There was no precipitation during the period November 1 to 15. Temperatures and wind movement were normal.

The fall meetings of the State's Pasture, Forage and Livestock Programs for the western division have been held in Scottsbluff. The programs occupied a full day. During the morning those attending the session visited various industries in the valley and during the afternoon they were entertained by speakers who discussed objectives of the programs. A meeting of Western Nebraska Organized Agriculture was held on November 15 at Mitchell.

U. S. Scottsbluff Field Station (Continued)

Station activities have included digging sugar beets, cutting beet tops and Leoti Red sorghum for silage, hauling manure and plowing. In making cane and beet top silage, green beet tops and Leoti Red fodder were mixed in equal portions by volume as they were put through the ensilage cutter. The beet tops were secured immediately after topping, and consequently were carrying considerable moisture; the Leoti Red fodder was taken from the shock and was carrying approximately thirty percent moisture. Approximately twenty tons of this mixture was cut and put into the silo for a preliminary study as to the feeding value of this silage. Last fall green beet tops were mixed with dry corn fodder for silage but in this mixture the moisture in the beet tops apparently was not readily absorbed by the dry fodder, consequently while the beet top portion of the mixture made excellent silage, the corn fodder portion was somewhat inferior. The sugar beet harvest has been completed both on the station and throughout the valley. The yields of sugar beets from the rotation plots have been tabulated. The lowest yield was 3.93 tons from Rotation 2; the highest yield was 18.04 tons from Rotation 21; and the mean yield from all rotations was 12.36 tons per acre.

Station visitors included Dr. H. D. Tate and Mr. I. D. Wood of the University of Nebraska. Mr. J. R. Mason who succeeded Mr. D. J. Roach as Manager of the Nebraska District of the Great Western Sugar Company also visited the station. Mr. Mason comes to Scottsbluff from Billings, Montana. A short time ago Mr. Roach was appointed to the position of Assistant General Manager of the Great Western Sugar Company with headquarters in Denver, Colorado.

Lionel Harris.

U. S. Yuma Field Station, Bard, California.

Good weather has prevailed during the period November 1 to 15. The maximum temperature was 92° and the minimum 45°. Precipitation totaled .19-inch and wind movement was only .7-mile which is below normal.

Harvesting activities on the project are rather quiet. Cotton is coming into the gins at a slow rate of about 30 bales per week. Most growers are waiting for a killing frost before making the final picking. The average date for the first freezing temperature is about November 20.

Grapefruit is moving in carload lots at the rate of about five cars per week. Prices are lower than usual for this season of the year and most shippers are holding back on the packing



U. S. Yuma Field Station (Continued)

operations on account of low prices. Some grain sorghums remain to be harvested and some early cuttings of fall alfalfa are being made. New crop activities are confined to the preparation of land for flax, cantaloupes and spring lettuce. The fall lettuce plantings are reported to be in fine shape.

Station work has included the ginning of cotton; harvesting corn and grain sorghums; preparing lands for fall grains and alfalfa seeding; pruning date palms; and general hoeing and cultivating.

On November 1 about 50 farmers of the Yuma Valley visited the station with the Yuma County Agricultural Agent to inspect the grain sorghums, cotton varieties, and grass nurseries. On November 7 a group of Imperial County farmers inspected the station tests.

E. G. Noble.

M I S C E L L A N E O U S

Mr. Scofield returned to Washington on November 10 after spending approximately two months in the west.

The work assigned to this Division in connection with the Pecos River Joint Investigation is getting under way, two agents having been appointed to carry on the field work of this investigation.





NEWS LETTER  
OF THE  
DIVISION OF IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture  
(Not for publication without prior consent of the Division)

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U. S. Belle Fourche Field Station, Newell, South Dakota.

The weather was unusually warm during the month of November. Temperatures ranged from a maximum of 69° to a minimum of 12°. The precipitation for the month was only .06-inch as compared with a normal of .49-inch. The total precipitation for the year to date is 9.89 inches which is 5.37 inches below the average.

The beet harvest was completed on November 10 and the sugar factory closed on the 28th. The average yield for the district was 8.6 tons per acre and the average percent sugar was 17.14. The first payment on the beets by the sugar factory was \$4.40 per ton.

Station field work included the completion of the sugar beet harvest, plowing and land leveling and the care of the livestock. The weather conditions for fall work were so favorable that field work was possible during the entire month.

Beyer Aune

U. S. Huntley Field Station, Huntley, Montana.

Dry and unseasonably warm weather continued during the period December 1 to 15, and with no rainfall of consequence for several months, the soil is becoming extremely dry and winter wheat is in poor condition. Local prairie fires have been frequent and large areas, particularly on the Crow Indian Reservation, have recently been burned over.

Recent midseason weights for lambs on feed indicate that satisfactory gains are being made. The daily gain per lamb during the first month ranged from .35 pound to .41 pound in the various lots. The feeding period will close about January 10, when a Feeders' Day will be held at the Station, and the results of the tests will be announced. A recent survey indicates that about one hundred thousand lambs are on feed on farms in this area.

Station activities have included the threshing of corn from the dry land, irrigated rotations and the dairy fields, and the routine work of caring for livestock.

U. S. Huntley Field Station (Continued)

Station visitors included Director Clyde McKee of the Montana State Experiment Station, Dr. R. T. Clark of the Animal Husbandry Department of the State Station, Mr. G. H. Bingham, Irrigation Specialist of the Montana Extension Service and Messrs. Floyd Larson and Wm. Jones of the Soil Conservation Service at Billings, Montana.

Dan Hansen

U. S. Newlands Field Station, Fallon, Nevada.

The weather so far this fall has been ideal. Freezing temperatures around 16° have occurred at night during the period November 18 to December 16, 1939, but the warm days make it possible to continue plowing and other farming operations. Little precipitation has occurred and but little snow has fallen in the Sierras. However, inasmuch as the greater snowfall occurs, as a rule, during January and February there is still little occasion for alarm. Some farmers are complaining that it has become too dry to plow. At the present time manure is being hauled on station plots requiring such treatment, old alfalfa areas that have previously been plowed have been harrowed, and ditches are being reconditioned for next summer's irrigation.

Some data covering field activities have been summarized. Results of six years' variety tests with alfalfa have shown the average per acre yields to have been - Grimm, 8,937 lbs.; Common, 8,443 lbs.; Baltic, 8,099 lbs.; Cossack, 8,043 lbs.; and Hairy Peruvian, 7,910 lbs.

A three-year average of winter wheat trials places Turkey Red first with a yield of 1,947 lbs.; Little Club second with 1,717 lbs.; in third place Albit with 1,716 lbs.; and fourth Tonmark with 1,695 lbs. These trials were conducted on rather sandy areas. Similar trials conducted with spring-sown wheats over a period of five years showed less yield during the three years this experiment has been conducted.

This year several tons of corn were cut and shocked in the field. After the corn had dried the stalks and ears were put through an ensilage cutter and later fed to dairy heifers. They seemed to consume it with little more waste than would normally occur when fed silage. This should be of practical use for farmers not wishing to construct a silo.

W. P. A. workers continue to be employed in cleaning ditches of weeds, repairing fences, and removing surplus trees.



U. S. Newlands Field Station (Continued)

Station visitors included Director S. B. Doten and Mr. F.B. Headley of the Nevada State Agricultural Experiment Station; Mr. L. C. Schank, teacher of vocational agriculture in the local high school; Mr. A. J. Reed, County Agricultural Agent of Lovelock, Nevada; Mr. W. H. Wallace, Manager of the Truckee-Carson Irrigation Project; and Mr. Thos. Williamson, Engineer in Charge of C.C.C. activities.

E. W. Knight

Irrigation Branch Station, Prosser, Washington.

The temperatures were seasonal during the period November 15 to December 16, but the weather was unusually dry. There was only a trace of rain during the period.

The Utah-Idaho Sugar Company has made an initial payment of \$4.35 per ton for sugar beets. The average yield of sugar beets for the district tributary to the factory was 16 tons per acre. The yield of sugar beets from the 13.5 acres planted in the Outlook tract previously used for experimental work on alkali reclamation, was at the rate of 26 tons per acre. This area included the reclaimed plots. Eliminating check plots the average yield was at the rate of 32 tons per acre.

Soil sampling on the rotation plots by W.P.A. project workers was started during the latter part of November. The W.P.A. workers also are engaged on a root sampling project in the apple orchard where samples are taken with a regular soil tube and root particles screened out and measured.

The mean yield of corn from all rotation plots was 35.7 bushels per acre. The lowest yield was 18.9 bushels per acre from Rotation 26 (corn and wheat) and the highest 55.9 bushels per acre from Rotation 50. These yields are calculated on shelled corn with 12% moisture. In general, corn yields were lower in the Valley than usual.

Station activities included the harvesting of Iowa Hybrid 939 seed corn, grading and placing it in the drier. Shelling corn from field plots and determining the moisture content was continued.

Carl A. Larson.

U. S. Scottsbluff Field Station, Mitchell, Nebraska.

There was no precipitation during the period November 16 to December 15. Temperatures and wind movement were normal during the first half of the period and slightly above normal during the latter half of the period. The prospects for irrigation water next year are beginning to look very discouraging.

Station activities for the period November 16 to 30 included weighing fodder from the sorghum variety experiment, hauling and stacking beet tops from the rotation plots, plowing, harvesting corn from the rotation plots, and building fences for fall horse pastures. The fall grass seedlings in the palatability experiments have been covered with potato vines to serve as protection against severe cold temperatures and drying out. The grass seedlings have emerged satisfactorily but at the present time are suffering from extremely dry weather. Owing to the favorable climatic conditions for curing, beet tops from the rotation plots have been stacked in excellent condition. For the period December 1 to 15 station activities included plowing, packing the plowed ground with the disk, husking corn from the irrigated rotation plots, threshing beans from the irrigated rotation plots, corrugating roadways and exposed fields to prevent blowing, and sorting samples of potatoes from the irrigated rotation plots for grade determination.

W.P.A. activities included pouring cement floors in the bull pens and under two open sheds and in the walkway which runs down the north side of the open sheds from east to west. A cement platform was also constructed at the north end of the silage hoist, which has also been completed by the W.P.A. Additional W.P.A. activities included painting, hanging doors, setting windows in the milking parlor, constructing gate controls for the milking parlor gates, digging sump, and constructing feed bunks. The cows were moved to the new quarters on November 24. Some difficulty was experienced in milking the cows the first few times in the new milking parlor, however, by the end of the period they were moving in and out with greater ease and confidence.

Six carloads of turkeys containing approximately 12,000 birds were shipped from Henry, Nebraska, previous to the first Thanksgiving holiday. The turkey processing plant at Henry has a capacity of 2,000 birds a day.

The annual meeting of the Nebraska Non-Stock Cooperative Beet Growers' Association was held during this period. Representative Coffee was the principal speaker. Other speakers included Mr. Charles M. Kearney, President of the Nat'l Beet Growers' Association, and local representatives of the organization. Mr. Kearney has recently been reelected President of the association.



U. S. Scottsbluff Field Station (Continued)

The annual meeting of the Nebraska State Irrigation Association was held during the first part of December at North Platte, Nebraska. Several representatives of local irrigation interests attended the meeting. The principal controversial subject discussed concerned the Kearney priority and the difficulty encountered in trying to send water down the North Platte River to Kearney to fill the requirements of their water rights which are the oldest on the North Platte River.

Station visitors included Mr. L. E. Gunderson, Finance Secretary, and Mr. L. F. White, Auditor, from the University of Nebraska; Professors Loeffel and Dall of the University of Nebraska; and Mr. C. E. Company of the Holly Sugar Co., Sheridan, Wyoming.

Lionel Harris

Umatilla Field Station, Horniston, Oregon.

During the month of November the temperature was normal and precipitation extremely low, with only .02 of an inch falling. The normal precipitation from October 1 to November 30 is 1.78 inches while this fall during the same period only .37-inch has fallen. A report from 7000 foot elevation on the Umatilla River water shed was that the roads were dusty the middle of the month although there had been a light fall of snow earlier. Stock men have been forced to feed for sometime because the low precipitation has deferred the starting of grass on the winter ranges. Practically no water is coming out of the mountains so the feed canal to Cold Springs Reservoir has not been opened.

Eight cars of turkeys have been shipped from the new killing plant of the local Association to date. The quality has been good and the price not too bad. Approximately 60,000 birds averaging 16 pounds or 960,000 pounds will go through the plant during this shipping season.

The grain sorghums again this year outyielded the corn varieties. The highest yielding sorghum was 4,946 pounds of grain per acre as compared with 3,546 lbs. for corn. The average of all varieties of sorghums was 3,542 pounds and of all corns 2,427 pounds. The 4-year average for sorghums was 2,959 lbs. and for corns, 2,633 lbs. These grain yields are calculated to 15% moisture for both sorghums and corns.

The field work consisted of hauling manure, cleaning ditches, regrading part of Field B4 and hulling alfalfa seed.

H. K. Doan.



U. S. Yuma Field Station, Bard, California

Temperatures for the month of November and the first half of December were above normal. Precipitation totaled .29-inch for the month of November; the lowest temperature reading so far this fall has been 40°.

Lettuce shipments from about 3,800 acres of the winter crop began at the close of November. The warm weather hastened maturity and produced smaller sizes in the winter lettuce crop. Prices have dropped to about production and packing costs. A plow-up campaign is being arranged with Yuma, Salt River and Imperial Valley lettuce growers to reduce the acreage to be marketed.

Grapefruit shipments continue at the rate of about five cars per week with prices holding lower than last season. Roadside sales to fruit peddlers have been made on a basis of \$6 to \$8 per ton.

Shipments of beef cattle and sheep from the ranges of Arizona and New Mexico to the farms of the Yuma Project continue. Practically all of the alfalfa fields will be pastured from now until spring.

Cotton picking and ginning continues at a slow rate. Although no frost has occurred, most of the growers are now making the final picking. The three operating gins report 2,775 bales ginned to date at about the rate of 300 bales per week since Dec.1.

Station work has included the picking and ginning of cotton; repairing the roller cotton gins; harvesting the seventh and final cutting of alfalfa; pruning date palms; trapping gophers; planting wheat, barley and alfalfa on the rotation tests; preparing land for a new alfalfa soil, fertilizer and microbiology test; threshing grain sorghum varieties; and general irrigating and cultivating.

Twenty land owners from the Palo Verde Valley accompanied by L. L. McFarlane, Assistant County Agent of Riverside County, visited the station on December 1 to inspect cotton, alfalfa and grass tests. Other visitors were Mr. J. S. Townsend of the Division of Cotton and Other Fiber Crops and Diseases; Mr. L.L.Stitt of the Bureau of Entomology and Plant Quarantine; Dr.H.G.Johnston of the Arizona Extension Service; Mr. F.E.Staebner of the Bureau of Plant Industry; and Drs.Richards & Ayres of the U.S. Regional Salinity Laboratory.

E. G. Noble

M I S C E L L A N E O U S

Mr. Scofield will leave Washington January 4 for Riverside, California, where he will be located for several months.

NEWS LETTER  
OF THE  
DIVISION OF IRRIGATION AGRICULTURE

Bureau of Plant Industry, United States Department of Agriculture.  
(Not for publication without prior consent of the Division)

Vol. 41 Washington, D. C. January 15, 1940 20 1xx

Belle Fourche Field Station, Newell, S. Dak.

The first half of December was exceptionally warm, with a mean temperature of 43°. The daily maximum temperature ranged from 41° to 74° and exceeded the previous high record of 66° for December on four days. The last half of the month was much colder and the temperatures more nearly normal. The minimum temperature was -2° on the 27th. The total precipitation for the year was 10.06 inches as compared to 15.70 inches average.

Owing to warm weather during the first half of the month, some of the trees and shrubs were beginning to show signs of leafing when the cold weather set in. What effect this will have on the trees cannot be determined at this time.

The feeder lambs were weighed on Dec. 4. The average gain per lamb for the 4-week period ranged from 8.05 in Lot No. 7 to 10.6 in Lot No. 1.

Field work was possible up to December 20, and land levelling in Field A was completed.

The repair work on the Orman Dam was completed the first part of December, and the storage of water resumed. At the end of the irrigation season in October, the water was down to the bottom of the Outlet canal gates. The water stored to January 1 amounted to only 5,500 acre feet, hence the prospects for irrigation water next year are beginning to look very discouraging.

Feed prices continue high; alfalfa hay, \$10 to \$12 per ton in the stack; corn and barley shipped in, \$1.10 per cwt.

Station visitors were Messrs. B. N. Bulashkin and J. W. Morrow of the U. S. Eng. Office, Sheridan, Wyo.; Messrs. E. R. Fogarty and R. N. Haley of the U. S. Bureau of Reclamation, Denver, Colorado and Belle Fourche, South Dakota, respectively; Mr. F. J. Dvorak, Soil Conservation Service, Rapid City, South Dakota; and Mr. J. E. Jeremiason, County Agent, Onida, South Dakota.

Beyer Aune

U.S. Huntley Field Station, Huntley, Montana

The drouth of several weeks was broken by rain and snow. The total precipitation amounted to .18 inch. Following the storm were several days of subzero temperatures with a minimum recorded of -14°.

The lambs in the cooperative feeding trial were weighed on Dec. 29. It is planned to close the experiment about Jan. 10 as the weights at the end of this 6-week period indicate that the lambs in most lots are approaching the desired weight and finish. Jan. 11 a feeders' meeting will be held at the station in connection with a Feeders' Tour of the Huntley Project and the results of the experiment will be made available.

Visitors at the station were Dr. R. T. Clark and J. H. Hughes of the Animal Husbandry Dept. of the Montana State Experiment Station.

Daniel Hansen

Irrigation Branch Station, Prosser, Wash.

A relatively large amount of precipitation fell during the latter part of December. There was 0.3 of an inch in the form of snow, and 0.60 of an inch as rain. The rainfall for the calendar year 1939 was 4.65 inches which is 2.02 inches below normal. The minimum temperature for this period was 17° and the maximum, 62°.

The principal station activities included the compilation of reports and laboratory work. Additional work consisted of taking soil samples of the rotation plots, and root samples in the apple orchard. Field work has been curtailed except for the WPA soil sampling crews.

Carl A. Larson.

U.S. Newlands Field Station, Fallon, Nev.

Each winter a small amount of station land is levelled if the weather permits. The area being levelled this year is south of Plot A9.

The CCC work of lining the LC lateral continues. At the present time the boys have completed about 60% of the required distance. Progress is slow, but the finished work should greatly benefit the station area. It should eliminate some water seepage from this elevated canal.

WPA employees have been busy enlarging the granary at the dairy barn and removing several large stumps and trees from the irrigation ditch banks. The remaining allotment of work on this project will soon be completed.



Farm commodity prices remain low. Eggs are selling for 18¢ per doz.; hogs, 5-1/4¢; lambs, 8-1/4¢; steers, 8-3/4¢; butterfat, 32¢; and hay, \$7.50 per ton in the stack.

E. W. Knight.

Scottsbluff Field Station, Mitchell, Nebraska

Precipitation during this period amounted to .26 inch, which is the total for the entire month. Precipitation for 1939 at the station amounted to 7.81 inches as compared with a 30-year mean of 13.65 inches, and for the growing season---April to September---of 1939 amounted to 5.86 inches as compared with the 30-year mean of 11.15 inches. Temperatures and wind movement have been approximately normal.

Exposed land was corrugated to prevent blowing; land was levelled; corn and cane fodder was ground for livestock; and potatoes were sorted during this period. The W.P.A. constructed grain bins in the feed room of the new milking parlor, closets and cooling tank equipment in the milk room, built additional dairy pens, and did some painting. This completes their project and work will not be resumed until a new project has been outlined and approved.

The winner in the Nebraska pasture forage livestock contest for the Western Division was Mr. Neal Barbour, a resident of the North Platte Valley. Mr. Barbour owns and operates an irrigated farm west of Scottsbluff. For a number of years, he has carefully followed a cropping program that has been considered sound in irrigation farming, and one that has proved profitable under his management. The cropping program consists of sweet clover pastured with sheep, followed by potatoes, sugar beets, and corn. In addition to maintaining a good-size flock of ewes and lambs, Mr. Barbour feeds some cattle and lambs and is thereby able to apply manure to his sugar beet land.

Mr. Lionel Harris returned to the station on the 27th.

Lionel Harris.

U. S. Yuma Field Station, Bard, Calif.

For the Dec. 16-31 period the maximum temperature was 81°; minimum, 30°, and no precipitation was recorded. The total rainfall for 1939 was 6.78 inches, which is about twice the normal amount.

Weather conditions have been ideal for the harvesting and planting of crops. The first killing frost of Dec. 27 was about 30 days later than normal. Fall planted barley, wheat, flax, and alfalfa have made good growth; cotton picking and ginning is about 90% complete on the project. Lettuce shipments continue with a better

market prevailing since the crop was reduced in the Yuma, Salt River, and Imperial Valleys by a plow-up of a third of the acreage. Grapefruit shipments continue slow with low prices. Quotations as low as \$8 per ton FOB Los Angeles are reported.

Station work has included the seeding of alfalfa, picking and ginning cotton, repairing the cotton gin, plowing and levelling lands for summer crops, pruning date palms, and general irrigating and hoeing.

A shipment of hybrid beets from B. F. Dana, pathologist of the Division of Fruit & Vegetable Crops at Corvallis, Oregon, was planted to increase the supply of beet seed of one of his strains.

The difficulty normal encountered in ginning long staple cotton during periods of low humidity has been partially solved by the installation of an evaporation cooler. One of the excelsior pads used in cooling a building in the summer time was set up in the gin, and the exhaust from the suction fan of the gin was reversed to blow the air through this water-soaked pad back into the building. The humidity was slowly increased by approximately 30% and the quality and quantity of lint from the roller stands were improved.

Mr. Geo. J. Harrison, Supt., of the U.S. Field Station at Shafter, California, visited the station on Dec. 28 and 29.

E. G. Noble.

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